

TRANSFORM

FOR ENVIRONMENT AND SUSTAINABILITY PROFESSIONALS

Environment
Economy
Society

May 2020

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Too many fish in the sea

Can the Scottish
salmon industry
survive without
transforming
its practices?



PLUS

Eastern promise Dr Waddah

Ghanem Al Hashmi on the UAE's sustainability commitments

Game changer Putting inclusive green growth at the heart of the post-coronavirus rebuild

Pint-sized pollution The threat posed by ultrafine particulates

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to sustainability



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MARTIN BAXTER, IEMA CHIEF POLICY ADVISOR

Standing together

This is an incredibly challenging time and members are rightly concerned about the health and economic crisis that has arisen from the global coronavirus pandemic. Our community of members includes professionals who are actively supporting the delivery of key services, working from home, furloughed or self-employed, and we are all having to quickly adapt to new working and social conditions.

We're committed to supporting you through the 'here and now', bringing together content on some of the key practical issues that are facing members. Whether it's the challenges being faced by the waste sector and their potential implications for businesses and households, the scheduling difficulties that are making it hard for organisations to maintain *ISO 14001* accredited certification and adapt to remote audits, or the seasonal baseline ecological surveys for project EIAs that are being put on hold – our aim is to highlight the issues and the practical ways that members are addressing them.

We're also mindful that anxiety and stress levels will be heightened during this difficult time, and we're therefore adding some online sessions on mental health first aid as part of our broader set of support tools for members.

One important aspect of the crisis is that many people have a reinvigorated sense of community, seeking to help and support each other in a wide variety of ways. We've been keen for IEMA to support the positive feeling of a professional community for environment and sustainability practitioners, helping to connect people into networks of likeminded colleagues.

As we move through the crisis, thoughts inevitably turn to rebuilding the economy and creating the future we want – and sustainability and climate change need to be at the heart of the debate. We'll continue to make the case to the government and ensure our work with all the main trade bodies as part of the Broadway Initiative is channelled towards putting sustainability at the heart of our future economic model.

"One aspect of the crisis is that many people have a reinvigorated sense of community, seeking to help and support each other"



IEMA Transforming the world
to sustainability

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

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ROUNDUP

ENVIRONMENT &
SUSTAINABILITY
NEWS AND VIEWS

AIR POLLUTION

Record fall in CO₂ emissions forecast for 2020

The largest ever annual decline in CO₂ emissions is expected this year as the coronavirus pandemic slashes transport use, electricity demand and industrial activity across the world.

Forecasts by Carbon Brief suggest an emission reduction equivalent to 4% of the global total recorded in 2019, which would be more than during any previous economic crisis or period of war.

Although the researchers said their predictions are "necessarily uncertain" due to the unknown length of lockdowns, they expect the pandemic to cause emission cuts in the region of 1,600m tonnes of CO₂ this year. However, even this would not come close to limiting global warming to 1.5°C, as envisaged by the Paris Agreement.

Carbon Brief warned that global emissions would need to fall by more than 6% every year this decade in order to limit warming to less than 1.5°C above pre-industrial temperatures.

"To put it another way, atmospheric carbon levels are expected to increase again this year, even if CO₂ emissions cuts are greater still," the researchers said. "Rising CO₂ concentrations – and related global warming – will only stabilise once annual emissions reach net-zero."

This comes after the International Energy Agency stressed that a decline in global emissions

will not be sustainable without coordinated changes to government policy.

Various other experts have also warned that emissions will quickly rebound unless the response to the pandemic can create lasting, structural changes towards net-zero emissions.

Meanwhile, a coalition of European politicians, business leaders and NGOs has written to the EU calling for unprecedented 'green recovery investment packages' to reboot economies once the health crisis has passed.

The 180 signatories, which include executives from PepsiCo and Microsoft, warned that the world faces a deeper economic shock than during the last financial crash, and that "what worked for the 2008 financial crisis may not be sufficient to overcome this one".

The coalition pointed to the European Commission's 'Green Deal' plan as a blueprint, and urged policymakers to use COVID-19 as an opportunity by "enshrining the fight against climate change as the core of the economic strategy".

"COVID-19 will not make climate change and nature degradation go away. We will not win the fight against COVID-19 without a solid economic response," the letter says. "Let's not oppose those two battles, but let's fight and win them at the same time."



HEALTH

Air pollution linked to higher COVID-19 deaths

Air pollution has significantly heightened the number of deaths from the COVID-19 pandemic, a study by Harvard University scientists has indicated.

After collecting data from around 3,000 US counties, the researchers found that even a single-unit increase in particulate matter air pollution is linked to a 15% rise in the coronavirus death rate. This is due to the underlying health issues brought on by air pollution, which are the same conditions known to increase the likelihood of death from coronavirus.

Rising exposure to particle pollution over 15-20 years was already known to magnify the risk of overall mortality, but the new study found that the increase is 20 times higher for COVID-19 deaths. This comes after satellite imagery found that air pollution levels have fallen in many cities across the world due to restrictions on transportation and business activities during economic lockdowns.

However, the scientists from the Harvard T.H. Chan School of Public Health said that the latest findings underscore the importance of continuing to enforce existing air pollution regulations during the COVID-19 crisis.

"A failure to do so can potentially increase the COVID-19 death toll and hospitalisations, further burdening our healthcare system and drawing resources away from COVID-19 patients," they wrote.

"The results of this paper suggest that long-term exposure to air pollution increases vulnerability to experiencing the most severe COVID-19 outcomes."

TRANSPORT

Electric vehicle sales to plummet

The coronavirus pandemic will result in a dramatic fall in electric vehicle (EV) sales worldwide this year, according to forecasts by energy company Wood Mackenzie. Global EV sales closed at 2.2m last year, but are expected to drop by 43% to 1.3m by the end of 2020. Wood Mackenzie said that the COVID-19 outbreak, delays to fleet purchasing due to a lower oil price, and a "wait-and-see approach" to buying new models have contributed to this projected decrease.

EV sales in China were down 54% at the end of January in comparison to the same time last year, and are thought to have fallen by more than 90% by the end of February.



Some EV manufacturers are offering discounts, and others will release new models over several years rather than the next 12 months. China is expected to catch up with 2019 EV demand by November 2020, while Europe will do so by December. US year-over-year demand is projected to lag 2019 demand by 30% by the end of 2020.

"The uncertainty and fear created by the outbreak has made consumers less inclined to adopt a new technology," said Ram Chandrasekaran, Wood

Mackenzie principal analyst. "Once the epidemic is contained in China, we suspect consumers will flock back to car dealers and reaffirm their confidence in EVs."



BUSINESSWATCH



Siemens and Uniper sign 'green hydrogen' agreement

Automation firm

Siemens and energy company Uniper have agreed to work together to decarbonise their supply chains and produce and use 'green hydrogen' from renewable sources. This will see Uniper's gas turbines, storage facilities and coal plants assessed for hydrogen use after it announced it would close or convert its German coal-fired power plants by 2025 at the latest.

"Together, we are working to use of hydrogen on a large scale and to make this clear to the world: our future lies in hydrogen," said Siemens Energy executive board member Jochen Eickholt.

► bit.ly/34COUr



H&M hits collection target one year early

H&M collected 29,005 tonnes of used garments in 2019 through its network of take-back points last year – an increase of 40% from 2018 – reaching its goal of 25,000 tonnes annually a year early. It also announced it will no longer source conventional cotton after achieving 97% recycled or sustainably sourced cotton last year.

The company revealed that 57% of its materials were either recycled or sourced in a more sustainable way in 2019, taking steps towards its 100% goal for 2030.

► bit.ly/3cg7qJ0



AECOM unveils science-based targets

AECOM has become the first US-based company in the engineering and construction sector to have emission reduction targets approved by the Science Based Targets initiative (SBTi). Designed to meet the goals of the Paris Agreement, these targets include a 20% reduction in scope 1 and 2 emissions, and a 10% reduction in supply chain emissions by 2025 compared to the firm's 2018 baseline.

"Business resilience and continuity are at the forefront of what we do and how we operate so that we can help deliver a better world," said AECOM chairman Michael S. Burke.

► bit.ly/2Vs0O3B

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Leadership roundtable

On 25 March 2020, IEMA Fellows and other sustainability professionals gathered online for a Fellows roundtable discussion, 'Enhancing collaboration for sustainability leadership', chaired by IEMA policy and engagement lead Marc Jourdan.

Marc introduced the session with a reminder of the poll findings collected at the December Fellows event, 'What makes a sustainability leader?'; attendees had deemed the three most important attributes to be developing partnerships (19%), authenticity (33%) and personal resilience (21%). He explained that the roundtable would use Fellows' insight to discuss Greater Manchester's sustainability aspirations, before identifying the key challenges and opportunities to support best practices in collaboration for sustainability.

Mark Atherton, director of environment at Greater Manchester Combined Authority, then presented Greater Manchester's 5-Year Environment Plan. He explained that the plan sought to convene stakeholders on a cross-sector "mission-based approach". He noted that the target-driven and outcome-focused 5-Year Environment Plan Forum, chaired by Tyndall Manchester director Carly McLachlan, FIEMA, helped external stakeholders in the public and the private sectors to support the plan's progress. A Q&A ensued, with attendees discussing a range of topics – from the replicability of the plan, to the role of futures and climate scenario planning in decision-making. This engagement also prompted input during the roundtable discussion, supported by the IEMA Policy Team.

The roundtable discussion benefitted from the input of a range of professionals working in local government, industry, consultancies and other organisations. Stressing the need for 'best in class' corporate sustainability to be on the basis of outcomes, participants emphasised that collaborative approaches should scope out common interest points with the right stakeholders and organisations that can make a big difference, before throwing the net more widely.

The insights will be collated to inform a Fellows insight briefing for release later in the year. Learn more at www.iema.net/policy/corporate-sustainability

● **Mark Atherton – GMCA** – Presentation available at bit.ly/2VBdViL

● **Marc Jourdan – IEMA** – Presentation available at bit.ly/3aeQUYs

CATCH UP ON OUR ADAPTING TO COVID-19 WEBINAR SERIES



ISO 14001 accredited certification – changes to surveillance audits and certificate renewal assessments during the pandemic

Outlines changes to UKAS policy on accreditation and conformity assessment during the pandemic and explores the challenges to maintaining ISO 14001 accredited certification. For many

organisations, ISO 14001 is a contractual requirement. What arrangements are in place to support organisations, and what can be expected from certification bodies?

Managing waste: risks to collection and disposal services

Explores the challenges faced by the waste sector and implications for businesses and households. Changes in waste streams, capacity issues, unachievable performance criteria, workers' safety, Duty of Care obligations and stockpiling are just some of the issues to be addressed.

● Find support at www.iema.net/adapting-to-covid19



happier. This webinar asks questions like:

- Are large cities good or bad for sustainability?
 - How can new technology make cities more sustainable?
 - What will the long-term effect of coronavirus be on city life?
- To register: bit.ly/2xwSUha

WEBINARWATCH

12 MAY WEBINAR

Environmental management: update on environmental management systems standards

IEMA chief policy advisor Martin Baxter hosts this webinar on EMS standards.

Attendees will gain: key information on the opportunities to address environmental issues relevant to their organisation; updates on the requirements and structure of ISO 14001; and updates on other key environmental management standards.

● To register: bit.ly/2KIQfKl

13 MAY WEBINAR

A Legal Perspective on EIA from Scotland and the wider UK (plus information on Scotland's EIA Conference 2020)

This marks the opening of activities related to Scotland's EIA Conference 2020 and will provide initial details for the conference, but its focus will be a presentation and Q&A with Neil Collar – partner at Brodies LLP, and a regular speaker and participant during the four years the conference has been running.

● To register: bit.ly/3afnYzr

28 MAY WEBINAR

IEMA Book Club – Happy City by Charles Montgomery

During the past few weeks, we have seen city life change beyond recognition. There is less noise, congestion and pollution, and communities are providing support for those in need. However, a pandemic is too high a price to pay for reduced environmental impacts and improved social cohesion. Is it possible to design a city to make residents happier – pandemic or not?

In *Happy City* Charles Montgomery shows in that living in densely populated cities can make us healthier, saner and

happier. This webinar asks questions like:

- Are large cities good or bad for sustainability?
 - How can new technology make cities more sustainable?
 - What will the long-term effect of coronavirus be on city life?
- To register: bit.ly/2xwSUha

**RICHARD LUPO, MIEMA CEnv**

Managing director at Suss Housing

Climate change and wellbeing

Maslow's hierarchy of needs is an excellent framework for thinking about health and wellbeing. We protect our environment to protect our basic needs – water, food, shelter and clean air.

Homes

The Met Office predicts a 10-20% increase in annual precipitation rates during the next decade, increasing the likelihood of flooding. The Met Office also projects a 2°C increase in average summer temperatures. Overheating in homes is an increasing problem, making some uninhabitable.

Water

A while ago, Environment Agency research found that climate change will reduce the amount of annual rainfall in the UK. Even though rainfall intensity will increase and cause flooding during individual rain events, the total amount of water will be reduced. The Environment Agency has concluded that we need a domestic water efficiency of 130 litres per person per day (lpd); average domestic water usage is currently 143 lpd.

Air

The fuels we burn for heating and transport emit air pollution. According to Defra, 10% of UK days have not met World Health Organisation safe levels during the past year.

Food

According to *The Economist's Global Food Security Index*, UK food security is currently only 71.9%. Climate change is affecting crops and food transportation.

Perhaps a national aim of 100% 'wellbeing', including environmental security, will make everyone truly aware of the importance of our environment.

**SPENCER CLUBB**

IEMA's head of policy and practice

Where next for biodiversity?

Biodiversity is by definition incredibly varied, meaning that when seeking to achieve net gain, losses will not be exactly the same as gains. Choices have to be made when creating or enhancing habitats, and some options will be better than others.

To support better decision-making, agencies such as Defra have introduced more sophisticated measures of losses and gains that seek to incorporate biodiversity's complexity and ensure poor options are ruled out. It is why IEMA, CIRIA and CIEEM identified and published 10 good practice principles, along with detailed guidance on delivering net gain. Training is being delivered to upskill practitioners, and a BSI Standard is in preparation.

Taken together, the metrics, principles and guidance should lead to good decisions. But is that sufficient?

As a secondary consideration, options for achieving biodiversity net gain can and should be designed to achieve wider ecosystem services benefits such as flood protection, recreational opportunities, increased water quality or carbon sequestration. However, policy designed to achieve multiple outcomes is not well developed and there is no clear incentives framework for delivering more holistic nature-based solutions.

Work is needed to define good practice around the delivery of 'environmental net gain' and build this into biodiversity net gain policy. There is also a need to integrate development-based net gain schemes with climate change mitigation and adaptation policy, including carbon offsetting. Only then will landowners be able to confidently calculate the long-term economic benefits they would gain from investing in changes to land use that deliver biodiversity and ecosystem benefits.

**TIM DANSON, PIEMA**

IEMA Steering Group member

Focus on the present

In these circumstances, I am sure many of us are focused on the 'three Cs' response to COVID-19: compassion, clients and (business) continuity. This is certainly the case at IEMA. It is engaging business leaders to provide answers to the questions that the pandemic has thrown at us (compassion), and continues to offer members lessons via *Transform* and webinars on tools, resources and guidance (clients and business continuity).

Of relevance to many is IEMA's grip on the principles of sustainable resource management. The IEMA Impact Assessment Network recently published a *Guide to Materials & Waste in EIA*, and hosted a pre-launch webinar on 19 March. The guide provides an opportunity for EIA practitioners and stakeholders to assess the environmental impacts of materials and waste, inspiring improved and consistent sustainable practice within the built environment. You may also know that IEMA has a Circular Economy Network Steering Group, which not only influenced the guide, but is also working with BSI to engineer international standards on circularity, as well as to improve the industry's understanding of related tools and processes.

Maintaining a balance between looking after our families, friends and colleagues, and keeping work flowing, remains a test. However, the situation is also challenging us to adapt, increase our resilience to change, and prepare for a time when we can respond to the lessons learned.

IEMA's work to integrate sustainable resource management practices in the built environment will help maintain circularity as a golden thread of environmental assessment, and futureproof much of our work – not least in the world of decarbonisation. I would urge each of you to continue to engage with IEMA's work in this area: focus on the present, but also keep an eye on our future.

NEW REGULATIONS

THE LATEST

■ LEGISLATION ■ GUIDANCE ■ CONSULTATION



PENDING

Recycling

The Draft Deposit and Return Scheme for Scotland Regulations 2020 aim to promote and secure an increase in recycling by making sure the targeted materials are collected in larger quantities, and separately to other materials.

cedr.ec/6ri



PENDING

Waste

The Welsh Deputy Minister for Housing and Local Government has confirmed that by 2021, Wales will ban single-use plastics as part of wider measures that hope to make Wales the top recycling nation in the world. A consultation is expected in the coming months.

cedr.ec/6rj



30 APRIL 2020

Waste

New draft regulations have been published for England that aim to restrict the supply of single-use plastic straws, single-use plastic-stemmed cotton buds and plastic drink stirrers, in order to prevent pollution of the environment or harm to the health of humans and animals.

cedr.ec/6rk



PENDING

Climate change

The European Commission has set out its proposal for a new European Climate law, which will write into legislation the goal set out in the European Green Deal for the European economy to be climate-neutral by 2050.

cedr.ec/6rl



10 MARCH 2020

Liability

Non-statutory guidance produced by the Department of Agriculture, Environment and Rural Affairs provides extensive information on understanding the requirements and application of the Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009.

cedr.ec/6ro



17 MARCH 2020

Environmental Permitting

The Environment Agency has published a Policy Paper on Safe and Sustainable Sludge Use. From 2021, sludge and septic tank sludge will be included into the Environmental Permitting (England and Wales) Regulations 2016, and as a result, the Sludge (Use in Agriculture) Regulations 1989 will no longer be needed.

cedr.ec/6rz



12 MARCH 2020

Climate change

The Department for Work and Pensions is seeking views on non-statutory guidance for occupational pensions on assessing, managing and reporting climate-related risks in line with the Task Force on Climate-Related Financial Disclosures.

cedr.ec/6rr



11 MARCH 2020

Recycling

HM Revenue and Customs seeks views on the detailed design, implementation and administration of a plastic packaging tax to ensure it meets the government's environmental objectives while placing only proportionate burdens on businesses.

cedr.ec/6rq

► A dismantler made £1.3m from stripping vehicles at his Somerset compound without an environmental permit

IN COURT

IN COURT

Scrap dealer to pay £400,000 for illegal car breakers yard

A dismantler claimed he was repairing vehicles, not stripping them, but made £1.3m over six years at his Westonzoyland compound in Somerset.

The case was brought by the Environment Agency following a joint investigation with Avon and Somerset Police. At Taunton Crown Court in March 2020, the scrap dealer was warned he would face a three-year prison sentence if he failed to pay the penalty imposed under the Proceeds of Crime Act 2002.

When Agency officers visited the premises in January 2015 they suspected he was dismantling scrap cars, despite being told he must obtain an environmental permit for this activity. Dismantlers must remove all hazardous components and materials from end-of-life vehicles, including batteries, oils, brake fluids and airbag cylinders. Sites must have special facilities, including impermeable concrete floors to ensure hazardous liquid spills are contained.

In February 2017, a visiting Agency officer noticed a number of car engines stored on wooden pallets at the site. The dealer said these were purchased in Manchester, but had no proof of purchase. The officer served him with a notice requiring waste transfer notes for all wastes brought onto or exported from the site between January 2016 and February 2017.

Audits of local permitted scrap metal dealers later confirmed the dismantler had been paid approximately £84,000 for car shells, engines, batteries, ferrous metals and non-ferrous metals over 20 months from January 2016. He also made money from the sale of re-usable vehicle parts, including the export of components to Greece and Georgia. Proceeds of Crime investigators discovered he was still operating illegally after entering a guilty plea in 2018.

The man was fined £384,100 and £16,629 costs, and given an 18-month conditional discharge.



Legal

OTHER NEWS

Water industry tackles supply issues

The Environment Agency has launched a plan to meet the water supply challenge posed by climate change and population growth.

The National Framework for Water Resources brings together industry, regulators and government to transform the way supplies are used and looked after. It aims to reduce demand, halve leakage, develop new supplies, move water to where it is needed and reduce the need for drought measures.

If action is not taken, it is predicted that, between 2025 and 2050, we will need more than 3.4bn additional litres of water per day to meet public demand. The framework suggests improving water efficiency across all sectors, working with water companies to halve leakage by 2050, and developing supplies such as reservoirs, water re-use schemes and desalination plants.



CASE LAW

Housing development appeal dismissed

A local resident appealed against a decision that a proposed housing development was not an EIA development.

In 2008, a developer applied for planning permission for 150 homes on Site A, a recreation ground previously used as a brickworks quarry. The local authority granted permission, but this was quashed by consent. In 2016 the appellant requested an EIA screening direction.

The Secretary of State directed it was not an EIA development as it was not likely to have significant environmental effects, and that an environmental statement was not required. This reflected the authority's earlier opinion.

The appellant sought judicial review of the screening direction, but the judge concluded there was evidential basis for stating there was no likely significant environmental effect. There was nothing unusual about the development, and the screening direction had adopted the approach required. Both the Secretary and local authority concluded that traffic from the development would have an effect on local Air Quality Management Areas, but that it was not likely to be significant.

Five other local potential development sites had been considered, and consented housing developments on other

sites were also considered by the Secretary in the screening analysis for cumulative impact. The respondents took all relevant considerations into account when reaching their conclusions.

There was no suggestion in the screening direction that the air pollution was treated differently because it would be in an urban environment. The screening direction made it clear the urban environment was part of the context, and a relevant factor when considering significance. The judge ruled that the development was not likely to have a significant environmental effect, so an EIA was not required.

The appeal was dismissed.

The framework also aims to make regional water transfers easier. It wants water companies to help consumers cut waste, in order to reduce average water use from 143 to 110 litres per day. Five regional groups will work on plans for their area, bringing together 17 English water companies, industry regulators, government and other users.

The framework sets out challenges that water-intensive industries are likely to face as a result of climate change, and how we can overcome them. It sets a greater level of ambition for restoring, protecting and improving the environment.

THE BALANCING ACT

Dr Waddah Ghanem Al Hashmi, winner of IEMA's Sustainability Leader Award, talks to Chris Seekings about his career and balancing economic growth with a low-carbon transition

The United Arab Emirates (UAE) has gone through a stunning transformation. In just two decades, the country, particularly Dubai, has become a tourism hotspot, famous for its numerous skyscrapers and architectural marvels rising up from the desert.

Oil was largely responsible for this boom in economic development and financial prosperity, with the Emirates National Oil Company (ENOC) instrumental in the country's upturn in fortunes. However, with concerns around climate change and sustainability at an all-time high, the fossil fuel industry is under immense pressure to adapt to a low-carbon world.

Dr Waddah Ghanem Al Hashmi, senior director of sustainability, operational and business excellence at ENOC, is on the frontline of this transition, and explains here how he fights for that change.

Blazing a trail

After applying to study chemical engineering at various universities in the UK, Dr Al Hashmi was offered a place on

an environmental engineering course at the University of Wales, Cardiff, in 1993. Despite not knowing much about the subject at the time, he was intrigued by the syllabus. "I had a mentor who told me, 'Look, son, this is going to become very important in the future, and something you should get into'. I accepted, and it's a decision I have never regretted to this day."

He subsequently became the first UAE national to obtain a degree in environmental engineering, and says the subject has only been taught in the region in recent years. "It wasn't a well-known degree because it was never an option. Now we have many people majoring in environmental engineering and science degrees."

Dr Al Hashmi believes that the perception of sustainability is largely responsible for this change, explaining that it may previously have been seen as an obstacle, with businesses only interested in regulatory compliance. "It was a very negative way of looking at it – all red tape and something you would get penalised for if you didn't comply."

The UAE has hosted various international environmental events



"Now people see sustainability as being good business as much as it is about making the whole world a better place"



in recent years, such as the World Green Economy summit in 2017, 2018 and 2019, and Dr Al Hashmi believes global forums have helped change attitudes. "We are involved in many of these discussions and debates, and now people see sustainability as being good business as much as it is about making the whole world a better place," he says. "To have been a steward of that change in the region has been very rewarding personally."

Leadership in action

Dr Al Hashmi's list of achievements is impressive, and during the past 10 of his 22 years at ENOC he has been key in setting up the company's environmental assurance, energy resource management and sustainability functions.

He received much support from his general manager at the time, who is now the CEO – but admits there were some concerns initially. "I was asking the business for a lot of data, because our approach has always been a scientific one," he says. "You also need a lot of money to invest in new infrastructure and research and development."

Dr Al Hashmi is responsible for oversight of sustainability practices throughout the whole company, and oversaw a 30% reduction in the firm's emissions intensity between 2011 and 2015. He and his team played a major role in integrating sustainability-related key performance indicators, and the business is now involved in many corporate social responsibility activities, taking a pragmatic approach to measuring social returns on investments

"There is a difference between being an environmentalist and a social constructionist environmentalist," he explains. "I am interested in helping the industry become responsible, more effective in managing resources and generally more sustainable, as opposed to someone that wants to hug trees. I am not against tree hugging – metaphorically speaking – but I am interested in transformational projects that create growth but also help sustain the planet for generations." 

Dr Al Hashmi also holds postgraduate degrees in environmental science and business administration, as well as a doctorate in corporate governance and leadership. He is working towards chartership as a board director, explaining: "If you can influence the board towards sustainability, then that's when you can really create a serious transformation."

A dose of realism

Oil prices have plummeted in recent years and fell as low as \$25 a barrel during the coronavirus outbreak – down from \$65 at the start of the year. This, coupled with concerns around climate change, is forcing companies to adapt their business models, but Dr Al Hashmi says it cannot happen overnight. "We are moving towards decarbonisation, but how do you do that? You need to bring in the money and create certain funds which are financed through current business models and resources." He says that a fall in the oil price just makes it harder to fund renewable energy infrastructure projects such as the Mohammed bin Rashid Solar Park in Dubai.

Rapid global changes are also making it harder to start new projects, whether they are related to conventional energy or renewables, and there is a shortage of local talent. "There are more universities providing environment-related subjects and training, and more people coming into the system, but are they skilled enough yet? No. We have shortages of skilled, experienced talent in

"I am interested in transformational projects that create growth but also help sustain the planet"

these fields. Developing talent in this area is the need of the hour."

There is also the issue of the thousands of staff currently employed across the sector's traditional business. "These people have particular skills, and if you change the industry suddenly, their skills become irrelevant," Dr Al Hashmi says. "Their skills need to be transformed, and you need to have enough people with the new skills to support the new industry, so it doesn't happen overnight. There needs to be a plan over the next five to 10 years – that's what sustainability is all about."

Sustainable growth

One of the biggest challenges facing companies in the UAE and the Gulf Cooperation Council (GCC) is managing a high economic growth rate with sustainability. "It's shocking what we have been able to do in the last 20 years alone," Dr Al Hashmi says. "Dubai is fast-growing, with a big requirement for resources, electricity, water, building materials, so it's difficult to manage in terms of overall sustainability. At the end of the day there needs to be a balance." He believes that the buildings "will keep going up", but not at the same rate, and is encouraged by the UAE's introduction of green building standards – the first country in the GCC to do so. Dubai's Integrated Energy Strategy, which aims for 25% of energy to be from clean sources in 2030 and 75% by 2050, is also grounds for optimism. "Honestly, when they first came out with this plan a few years ago I didn't think it was achievable. But looking at the fast-changing

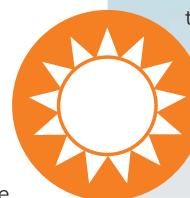
Dubai's landscape and economy have been transformed during the past 60 years – requiring huge amounts of electricity, water, building materials and other resources. It is now trying to balance its economic growth with sustainability.

technology, improving efficiencies and commitment, now I think it is possible. We seem to be moving faster than expected."

He also describes Dubai's young population as a "massive opportunity" – 85% of UAE nationals are below the age of 40 – and says that mentoring is now a passion of his. "A lot of people have chosen to live a life where they can have access to more power and energy, stuff which as kids they may not have had, but this has fuelled overuse of resources on earth," he says. "I think it is about responsible consumption, and we have to educate people how to be responsible, rather than telling them they should not consume at all, because that's a lost battle."

Solar solution?

With sunny weather for most of the year and temperatures hitting more than 45°C in the summer, it may seem puzzling as to why solar energy is not more prevalent in the Middle East. The International Renewable Energy Agency believes 60% of the GCC's surface area is well suited for solar. "I had the pleasure to meet Prince Charles about a year ago, and he said, 'You should tell your friends to keep the black stuff in the ground, you guys have a lot of sun'. I replied, 'Yes, Your Highness, but I must respectfully remind you



"You need enough people with the new skills to support the new industry, so it doesn't happen overnight"

that there is also a lot of dust that comes with that sun!" The efficiency of solar is impeded by dust landing on the panels, and when this dust collects in the air it also limits the amount of direct sunlight. "That's why, in places like Scotland or Germany, solar is effective – because when it's sunny, the skies are clear."

There is also not much land available for solar in Dubai, and the sector is highly regulated. "If I wanted to put solar panels on my house, I would have to go to certain contractors approved by the authorities – I can't shop around." The Dubai Electricity and Water Authority has a mandate from the government to produce electricity

from solar to ensure public safety, quality installations, and balanced power generation within the emirate. Nevertheless, solar panels feature heavily in ENOC's ghaf tree-inspired service station, which is to be unveiled at Dubai Expo 2020, delivering power savings of 48% and the region's first LEED Gold-certified service station. "I don't know if we can build all stations that way, but we have exciting plans."

Celebrating success

The judges at IEMA's Sustainability Impact Awards last year said: "Transformative individuals who are willing to challenge their board's

systemic thinking and their sector both nationally and globally must be recognised for the work they do. Dr Waddah Ghanem Al Hashmi is such an individual." He says that he was particularly proud to win the Sustainability Leader Award considering the competition from his European counterparts. "I have had the opportunity to achieve many things at different stages of my career, and I was very happy, and am very privileged, to win such a prestigious award," he says "It was very tough for someone not working in Europe, where a lot of these applications come from, and IEMA took a lot of care in producing a very well-thought-out event. I want to place on record my appreciation for my team, the management team led by the CEO, and the board of directors at ENOC for their support, leadership and stewardship."

As well as being a highly respected sustainability leader in the Middle East, Dr Al Hashmi is an accomplished author; he has written six various technical books to date, and co-written a book on the first seven verses of the Quran with his father, Dr Shihab M Ghanem – the first Arab to receive the Tagore Peace Prize for Literature from the government of India in 2013.

"We believe that when the Almighty created mankind, he told the angels that he was to place humans on earth to represent him as custodians of the planet," he says. "There are many versus in the Holy Quran about protecting God's creations, and particularly beautiful verses describing the servants of the Most Merciful as being those who tread softly on the earth, and others that describe the spread of corruption of the land and sea, which you could interpret as pollution."

In a final message of optimism, he says: "It's impossible to say what the fossil fuel industry will look like in 30 years, but the good news is that there are many new developments and technologies that are making the sector cleaner and safer, and we will leverage sustainable technologies more than we have over the previous 30 years." 

Sound surroundings

More and more companies are looking to create healthy workspaces for sustainability, as well as recruiting and retaining employees. *Huw Morris* reports



When multidisciplinary consulting engineering consultancy Cundall planned to refurbish its London office, its prime motivation was attracting and retaining quality staff. Then, however, the company saw an opportunity for an exemplar project focusing on sustainability and wellbeing.

When fitting out its 14,300m² office at One Carter Lane, Cundall used the WELL Building Standard, a performance-based certification system that marries best practice in design and construction with evidence-based medical and scientific research to create healthy and sustainable workspaces.

The project's lighting design combines an office layout that maximises natural daylight with light sensors that reduce or increase lux levels when appropriate. Other features are more prosaic, such as changing facilities, showers and bike racks to encourage cycling to work, as well as weekly yoga classes and fresh fruit in the café. One Carter Lane has won accolades: the first building in Europe to achieve the highly coveted Gold Certificate under the standard in 2016.

"The acceptance of sustainability, the wellbeing of the planet and the environment as an integral part of most developments has been a long fight," says Cundall's sustainability partner Alan Fogarty. "The WELL Building Standard takes a slightly different view – putting people's wellbeing at the heart of the building. One thing our design at One Carter Lane has shown quite clearly is that, although the

two ideas need to be addressed together and holistically, the two are not always completely compatible."

A research-based standard

So what is the WELL Building Standard? And what's in it for employers? One statistic drives both: most people spend 90% of their time indoors. "The indoor environment has a huge impact on people's health and wellbeing," says International WELL Building Institute's Europe manager Laura Wilkes. "The physical and social environment has a much larger impact on people's health than lifestyle, medical care or genetics."

The standard is the culmination of six years of research on integrating environmental health, behavioural factors, health outcomes and demographic risks with building design, construction and management. This evolved into a



"The physical and social environment has a much larger impact on people's health than lifestyle, medical care or genetics"

THE WELL BUILDING STANDARD – BY NUMBERS

4,034

The number of WELL projects registered around the world

 **280**

The number of projects formally certified under the standard

47,287,644
square metres

The amount of WELL project space globally



58

The number of countries with WELL projects



performance-based system that measures, certifies and monitors seven features of the built environment that affect human health and wellbeing: air, water, nourishment, light, fitness, comfort and mind. Spaces are evaluated for one year to ensure all necessary criteria are met before achieving certification, and are then re-evaluated every three years. The primary focus is occupant wellbeing, with more and more companies wanting to create healthy places for their staff.

Since its launch in 2014, more than 4,000 buildings across the world have been registered or certified under the standard. For many companies, investing in people and helping to improve their physical and mental health makes common sense, with 90% of corporate expenses linked to salary and benefits. This means the return on investment of healthier and happier employees extends to cost savings.

Money well spent

Cundall spent £850,000 on the fit-out and a further cost in certification fees, consultancy time and hard materials of £55,000. Within 12 months, it was paying back. The company reported a 27% drop in staff turnover within a year, saving £122,000, while absenteeism fell by 50%, leading to an annual saving of £90,000.

Although measuring improvements to employee performance is tricky given the wide disparity in metrics and staff tasks, some statistics are emerging. CBRE Madrid,

CASE STUDY – ARUP, BOSTON

In 2017, engineers at Arup, Boston refurbished a 1970s-built office at State Street to the WELL Building Standard before moving in. New features included a circadian lighting design with dynamic controls to automatically adjust brightness and colour in line with the position of the sun. The office also had highly reflective ceiling materials for maximised indirect lighting, a ventilation system to

filter air and ventilate spaces in response to occupancy levels, as well as a larger dining area to reduce mindless eating at desks. The company provides healthier food options, while a sparkling water dispenser means staff hydrate more often. Arup conducted an occupant survey at its old office in Mass Avenue and then another survey six months later at its new office, then compared the two:

Question	Old office	New office
Satisfied with glare at workstation?	51%	81%
Is the lighting environment comfortable?	42%	75%
Satisfied with lighting at workspace?	35%	74%
Sit at your desk 8+ hours per day?	40%	14%
Sit at your desk 5+ hours per day?	94%	71%
Experience bothersome noise from colleagues?	75%	38%
Provided access to healthy food options?	23%	94%
Satisfied with quality of space to eat?	23%	94%
Eat lunch at your desk 3-5 days per week?	63%	27%
Sense of community at work?	65%	87%
Office environment is inspiring and energising?	38%	72%
Proud to bring visitors to the office?	33%	94%
Productivity positively impacted by office environment?	8%	68%
Feel healthier when in the office than out the office?	2%	43%
Workplace supports creative thinking/collaboration?	37%	83%

another Gold winner, reports that 80% of employees think its new office enabled them to be more productive. The company found overall productivity had increased by 30%. Other savings speak for themselves – a 12% reduction in energy use, water consumption down 40% and overall employee satisfaction up 76%.

Office developers are now getting in on the act. In the US, the Urban Land Institute says developing healthy buildings leads to greater marketability, faster leasing and sales or higher rents – in some cases as much as 20% above market rates.

Yet regardless of the financial benefits, the key principle remains. "If you change the environment, you can change how you live," says Wilkes. "The ultimate goal is creating a positive human experience." 

HUW MORRIS is a freelance journalist.



Air pollution

An invisible threat

Rick Gould asks, are ultrafine particles the new pariah of pollutants?

Earlier this year, a group of international scientists published the results of research that determined the sources of airborne ultrafine particulates (UFPs) in four major European cities. This work illustrates a rapidly growing interest in these tiny particles, which are currently not directly regulated, but can have significant impacts on human health. What are UFPs, where do they originate, and why are they generating so much discussion?

Ultrafine particles

UFPs are particles that are less than $0.1\mu\text{m}$ across, and are also known as PM0.1. These microscopic particles are a small component of PM2.5, itself regulated in ambient air. While the overall mass of PM0.1 is small, they make up for this in their numbers, and ability to reach deep into the human body. "The sheer number of particles in our air is astonishing. Air in our cities typically contains up to 10,000 particles in each cubic centimetre," explains Dr Gary Fuller, researcher at Kings College London and member of the Air Quality Expert Group (AQEG), which advises Defra.

The science of counting particles, instead of measuring their mass concentrations for regulation, is not new. In 1880, for example, Scottish meteorologist John Aitken published a paper in the *Proceedings of the Royal Society of Edinburgh* called 'On

dust, fogs, and clouds'. Aitken determined that aerosols form around the nucleus of a dust particle. He had invented a device known as a koniscope, the first instrument that could count the number of particles in the air, and found that the air contains a huge number of particles, all originating from many sources.

During the 20th century, scientists and legislators focused on mass concentrations of airborne particulate matter. Along with epidemiological studies examining the health impacts of this pollutant, this led to legislation to control their emissions and concentrations in ambient air, especially for respirable particulate matter – that is, PM10 and PM2.5.

However, during the past 20 years, there has been renewed interest in the numbers of airborne particles, especially UFPs. "There was growing excitement and concern about the use of engineered nanoparticles, and hazards and risks with them," describes Fuller. "In the ambient air, Professor Anthony Seaton proposed a new hypothesis of the mechanism by which particles affected our health, through their number and the number of locations where the body has to mount a response. Both these factors led to renewed interest in counting the tiny particles in our air. Since this time there has been an increasing number of epidemiological studies that have looked at the association between UFPs and health."

Fuller was part of a team carrying out one of these investigations in London; it found that the number of particles

in the air was associated with heart attacks, while other metrics concerning the mass of particles were linked to hospital admissions and deaths associated with respiratory illnesses. Other investigations produced similar results. So, what did the recent research in four European cities reveal?

A tale of four cities

"This project began as an idea with researchers in Barcelona, who identified key European cities that were building large datasets. By understanding the sources in these cities, it would open up the possibility for health studies in the future, and for control policies, too", says Fuller. The researchers measured UFP numbers in Helsinki, London, Barcelona and Zurich under comparable conditions.

Overall, they discovered that between 74% and 94% of UFP measured came from road traffic, confirming findings from similar investigations. The overwhelming results of several studies on UFP sources point to road-traffic emissions as the main culprit, especially from vehicles with diesel engines. The other major sources are: all types of combustion plants, notably those fuelled by coal, oil, and biomass; aircraft at airports; shipping ports; and municipal waste incinerators. The latter has the smallest emissions of these sources.

Waste incineration

Incinerators themselves have drawn a lot of attention from those concerned with their contributions to ambient levels of UFPs. One pressure group, for example, has repeatedly asserted that incinerators are a significant source of UFPs, although peer-reviewed evidence from measurements does not support this assertion. One detailed investigation in Milan, for example, determined through measurements that UFP numbers in the stack gases of a waste incinerator were equivalent to those measured in ambient air, as evidence shows the abatement techniques for removing UFPs from flue gases are extremely effective. This is because legislation, such as that in the UK and the EU, specifies that incinerators must have best available techniques (BAT), such as fabric filters, to control particulate emissions. Investigations report that fabric filters remove up to 99.99% of UFPs, therefore making incinerators one of the smaller sources of this pollutant. That said, if UFPs in ambient air are clearly a significant health risk, then what are the challenges in monitoring and controlling them?

A secondary challenge

Larger particles, such as PM10 and PM2.5, are now relatively easy to measure and control from many sources. "However, there are some sources of UFPs that are largely outside of any current legislation. And we may need to devise new control technologies and policies for these," explains Fuller.

UFPs, like PM10, can be primary pollutants – they are emitted directly from a source, such as car exhausts, biomass boilers and aircraft. However, under the right

TINY BUT TOXIC

UFPs

are particles that are less than $0.1\mu\text{m}$ across, and are also known as PM0.1



Air in our cities typically contains up to 10,000 particles in each cubic centimetre



Researchers discovered that between 74% and 94% of UFPs measured came from road traffic

conditions, semi-volatile compounds in the air can condense and react with other chemicals to form secondary UFPs. Emissions of volatile organic compounds and sulphur dioxide from road traffic, for example, can promote the formation of secondary UFPs.

Secondary UFPs are much more challenging to control. The investigation into UFPs in European cities, for example, found that the concentrations of certain pollutants such as sulphur dioxide and ammonia, temperature and degree of sunlight have a strong influence on forming secondary UFPs. This, in turn, makes them harder to control.

Another challenge is detecting particles that are so tiny, especially if they are smaller than the wavelength of light. The solution is normally to grow them first by condensing butanol onto each tiny particle to enlarge it, so that the particles can then be detected. Monitoring locations are also sparse when compared with those for measuring PM10 and PM2.5, although the AQEG has recommended expanding the number of monitoring stations for UFP so we can learn more about their abundance and behaviour.

Then there is the increasing body of research pointing to the health impacts of UFPs. "A group of prominent European air pollution health-scientists have recently proposed that we include them in air pollution legislation," Fuller says. 



RICK GOULD, MIEMA CENV is a technical advisor at the Environment Agency. He is writing in a personal capacity.

Sleeping with the fishes

David Burrows

explores the environmental record of Scotland's salmon-farming industry, and what aggressive expansion could mean for nutrition and local ecosystems

Last year, Scotland exported record amounts of its farmed salmon; some 94,000 tonnes were sold to 54 different countries. The product's "good environmental story, with its small carbon footprint and low water use, plus global recognition of its taste, quality and provenance, is clearly understood in almost every corner of the globe," says Julie Hesketh-Laird, chief executive at

the Scottish Salmon Producers Organisation (SSPO).

Scotland has done a brilliant job of marketing its salmon as both "climate friendly" and healthy. However, look beneath the surface and there are secrets lurking in the dark of the vast open-net cages used to produce the fish. "By wreaking havoc on the environment, the salmon industry is in the process of destroying its own marketing strategy, along with Scotland's image as a quality

food producer," wrote Lynn Schweisfurth, a member of the Salmon Aquaculture Reform Network Scotland, in 2018.

Rising controversy

During the past two years, the sector has been the subject of a damning BBC Panorama investigation – in some farms salmon were being "eaten alive" due to severe infestations of sea lice – plus two inquiries by MSPs that questioned the sector's plan to double production by



2030. "There's not many places I've regulated where we've had such controversy around a whole sector," Terry A'Hearn, chief executive of the Scottish Environment Protection Agency (Sepa), told me recently.

He was speaking prior to the publication of Sepa's latest compliance assessment scores. These show whether the thousands of sites being monitored by the regulator are complying with specific environmental licences. Aquaculture has traditionally been a laggard – and continues to be. The 2018 scores, released in February, showed that 85.5% of the 372 sites were compliant: an improvement on 2017 (81.14%), but below 2016 (85.75%). Compare this with whisky, distilling and brewing – another Scottish economy powerhouse – which managed 95.5% compliance, and fish farms clearly have a long journey ahead.

Farms tend to fail because they don't adequately protect the seabed from the organic waste that floats down onto it. This is largely faeces and uneaten feed, and there are 40,000 tonnes of it every year, according to campaigners. The waste leaves a 'footprint', smothering the seabed and the creatures that live in this benthic zone. Given that most of the farms use open-net cages, some of waste also disperses far and wide.

Farmers have long found it tricky to tackle this issue. The government flagged it all the way back in 2002, and MSPs who looked afresh (and in great detail) more recently found the same old problems – but the scale and impact had increased. "The sector continues to grow and expand with little meaningful thought given to the impact this will have on the environment," noted the Environment, Climate Change and Land Reform Committee. It also stated that "if the current environmental impact issues are not addressed, the expansion will be unsustainable and may cause irrecoverable damage."

This was a blow: the sector had plans to double production



to 350,000 tonnes of salmon by 2030 (against 2016 levels), but now MSPs were pushing for a "precautionary approach". Sepa changed its approach and updated its modelling to better predict how waste will be distributed as it reaches the seabed. Cathy Tilbrook, head of sustainable seas and coasts at Scottish Natural Heritage, another organisation involved in overseeing the salmon sector, says the previous model wasn't giving the correct answers in some cases, but the new one is "more sophisticated".

"I think we need to not kid ourselves about the new modelling and what this is designed to do for benthic pollution"

Trouble ahead

Others are not convinced. "I think we need to not kid ourselves about the new modelling and what this is designed to do for benthic pollution," says Guy Linley-Adams, a solicitor who works for Salmon and Trout Conservation Scotland (S&TCS). "Sorry to be cynical, but one senior Sepa person once told me that his view was that there is an awful lot of sea bed out there, so 'so what' if the fish farmers trash a little?"

What's more, the new model could permit even bigger farms – the previous limit was 2,500 tonnes, but plans have been submitted for a 200-cage, 5,000-tonne farm off the coast of Arran. Local campaigners say this will produce faecal waste equal to a town of 66,000 people, not the 14,000 claimed by the owners, Scottish Salmon Company.

The size of the farm has made it national news. However, there are a number of other new plans in the system, amounting to another 14,000 tonnes of salmon production. The likes of the SSPC has complained that these are stuck in a regulatory system that is "tangling companies up", but environmental groups argue there shouldn't be any

Ecosystems

expansion until the sector improves on its environmental record and get to grips with the issue of sea lice.

These parasites have hit production volumes hard and are proving pesky to control. Data compiled by the S&TCS showed that the average adult female sea lice count per fish almost doubled between April 2018 and April 2019. The government recognises that farming salmon can result in elevated numbers of sea lice in open water, and increase infestations in wild fish – but the extent of the impact on wild populations and mortality isn't well understood.

Better to be safe than sorry, then, because the treatment options aren't ideal either. Chemicals have traditionally been used, but their residues are hanging around for longer and spreading much further than previously thought. There are also issues with so-called 'cleaner fish' – demand for these to help address sea lice infestations has soared, putting some wild stocks at risk. The welfare of these fish from capture to deployment is "also a concern", the Marine Conservation Society has warned.

Declining nutrients

The capture of wild fish to feed the salmon is another worry. "We catch fish in various parts of the world, process them into salmon food, and then feed them to salmon. That is highly inefficient," professor Ian Boyd, then chief scientific adviser for Defra, told MPs in 2018. Double production of salmon and the demand for these resources will inevitably increase.

The hunt is on for alternatives, with algae and genetically modified crops the subject of attention. This is because vegetable oils and protein are proving inadequate replacements for oily fish in the salmon's diets. As Corin Smith, founder of the campaign group Inside Scottish Salmon Feedlots, explains, it's a bit like feeding a lion corn on the cob: it's not going to go down as well.

Greater use of vegetables and plants in the feed has also had a



"If nothing is done, the level of beneficial omega-3 can only really go down"

knock-on impact on levels of long-chain omega-3 fatty acids in Scottish salmon. Research of 3,000 farmed fish between 2006 and 2015 by the University of Stirling showed a dramatic fall – so dramatic, in fact, that people have to eat "double portion sizes" to meet the weekly recommended intake of these health-promoting fatty acids. "Farmed salmon is just about the best way of getting omega-3 in our diet," lead researcher Professor Douglas Tocher told the BBC. However, "if nothing is done, the level of beneficial omega-3 can only really go down".

Despite all the scandals and criticisms, salmon companies still have plans for production to go up. "We can do better and we are determined to do better," says SSPO's Hesketh-Laird, adding that the target to double growth is not under review. Campaigners will keep pushing for a moratorium on expansion, though. "Scottish ministers need to act now and stop kicking the necessary decisions into the long grass," said Linley-Adams.

Politicians are not as worried as they once were. In January, SSPO published a survey of MSPs showing that 43% now viewed the sector favourably, compared to 34% in 2018. Only 20% had a poor impression. Whether this is because the sector has leaped into action and is tackling its challenges head on, or because it has spun a good story, is a moot point. "The industry hasn't reacted as well as it could have done," admits a senior source in the industry. However, it is "the healthiest, most sustainable source of protein you can grow." Proving this remains a challenge.

DAVID BURROWS is a freelance writer and researcher.



Are trends electric?

Gloria Esposito looks at how the UK's road transport could meet net-zero aspirations, via both electric vehicles and sustainable fuels

The road transport sector is responsible for 25% of UK greenhouse gas emissions, and this is on upward trajectory. The government's Road to Zero Strategy makes electric vehicles (EVs) a focal point for decarbonising these emissions.

Presently, 4% of new car sales are zero-emission models, covering plug-in hybrid and battery electric technologies. The government and the Climate Change Committee say this must reach 50-70% of new sales by 2030 – meaning a 30% increase in new EV sales each year is required. A combination of carrots and sticks will be needed to accelerate take-up, such as Zero Emission Zones and a ban on the sale of new internal combustion engine cars by 2035. While industry experts predict EVs will reach price parity with fossil fuel counterparts by 2025, government fiscal incentives will need to continue for some time to make them affordable. Innovative fiscal policy will be required to accelerate EV demand while addressing loss of fuel duty. Carbon pricing should be a candidate, potentially aligning the cost of fuel and energy with lifecycle greenhouse emissions.

Net-zero road transport emissions by 2050 cannot happen through EVs alone. Wide-scale charging infrastructure deployment, and a smart, low-carbon electricity grid, are intrinsic parts of the roadmap. The UK's electricity supply is transforming, with carbon intensity falling by more than 50% during the past six years. The decarbonisation of the grid will allow EVs to be truly zero-emission.

Challenges and barriers

One of greatest challenges is the heavy-duty vehicle sector. The UK bus sector has been progressive, with 10% of new bus sales being electric; more than 300 are in operation. However, the market for electric urban trucks faces barriers. These include limited available models and high vehicle capital costs. Electrification of fleet depots is also difficult economically and in terms of charging infrastructure. It will take many years and government funding to kickstart the market.

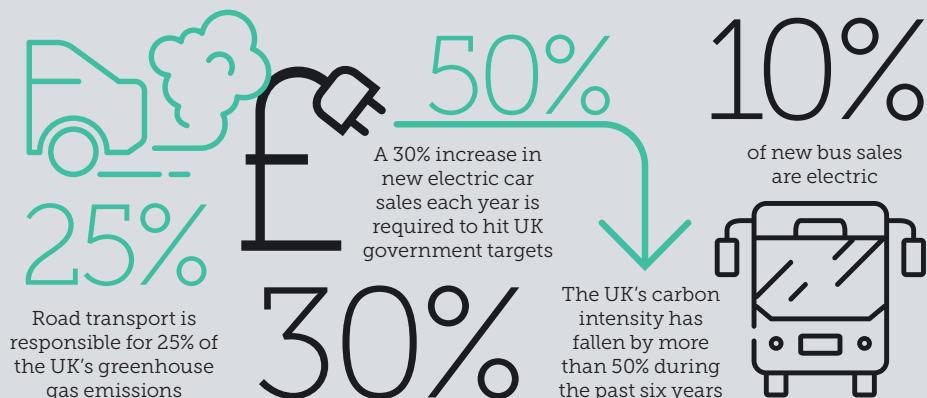
For long-haul trucks, low-carbon and sustainable fuels such as biomethane and biodiesel will play a role; these are being deployed by logistics companies and supermarkets. The commercialisation of more advanced low-carbon fuels will be a necessity for the road transport and aviation sectors during the next decade.

Finally, zero-emission transport must be sustainable. Supply chains for the raw materials used in lithium batteries will require management in order to conserve resources and maintain availability. The responsible mining of metal resources will be increasingly important, driven by investors' ESG responsibilities. The automotive R&D community needs to address battery end-of-life, embracing the circular economy through improved battery design that allows raw materials to be recycled and batteries re-used. Numerous challenges must be addressed – but collaboration between stakeholders, innovation and intelligent national policies will help overcome them.

GLORIA ESPOSITO, MIEMA CEnv is head of projects at the Low Carbon Vehicle Partnership

DRIVING CHANGE

Electric vehicles will play a significant role in the decarbonisation of road transport

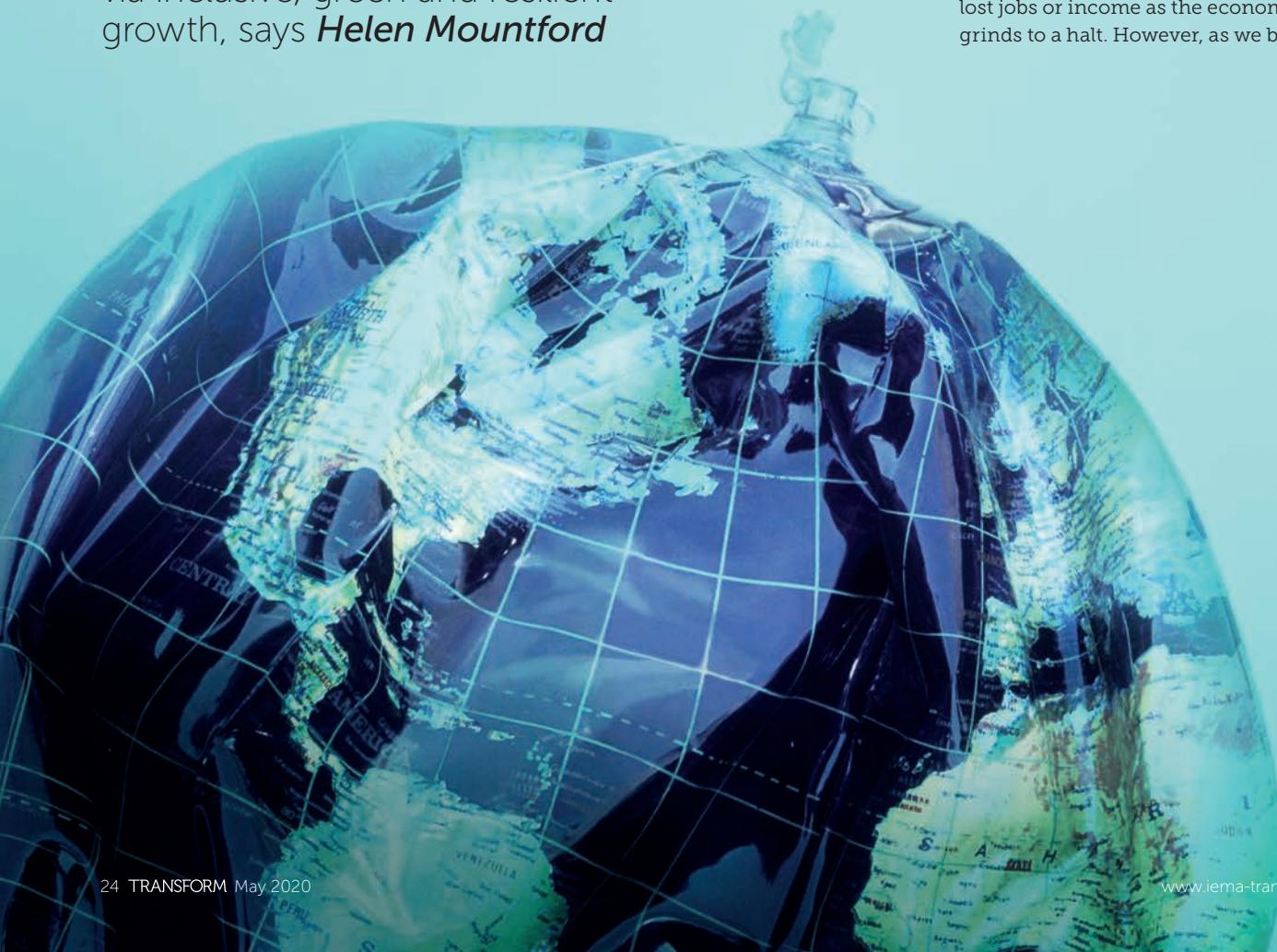


The road to recovery

Governments must build back better after the COVID-19 crisis via inclusive, green and resilient growth, says **Helen Mountford**

The world is currently witnessing a health emergency and human tragedy. The loss of life as a result of COVID-19 is devastating, and set to continue increasing around the world. The pandemic is a sobering reminder of how vulnerable our societies are to threats beyond our control, and of the importance of addressing those risks we can mitigate – such as the climate crisis, and the infectious disease spread and natural disasters exacerbated by it. As the impact of the pandemic unfolds, sharpening existing inequalities and injustices, it also emphasises the need for a more just and resilient society.

The top priority for governments in the first wave of emergency relief packages is to stop the spread of the virus, save lives and address the immediate needs of those who have lost jobs or income as the economy grinds to a halt. However, as we begin



to quell the immediate health and social crisis, a resulting economic crisis is hot on its heels, and is likely to be the largest for many generations. The world was already seeing signs of a global economic slowdown before the pandemic began. Now it has been accelerated, and a major global disruption triggered.

A second wave of government interventions to stimulate economic growth will be needed. Governments and multilateral institutions are already discussing the allocation of trillions of dollars to boost economies. They will find themselves at a crossroads: they could restore the unequal, unsustainable high-carbon economies of today, or they could shift to more inclusive, resilient and low-carbon development paths.

The decisions they make now will have lasting effects on the structure of societies, economies and government for decades to come. COVID-19 has revealed just how interconnected we are. As leaders develop recovery plans, they cannot focus on a single crisis, or they risk aggravating others. Investing in major shovel-ready infrastructure projects that lead to pollution – whether fossil fuel power production or roads and highways – would be one example of a post-crisis economy boost that would worsen other crises, namely the climate crisis and air pollution. Outdoor air pollution, largely from the burning of fossil fuels, kills more than 4.2m people each year alone according to the WHO. Instead governments can – and must – address the health and economic crises caused by the pandemic and climate change together.

A low-carbon shift

For many, the focus of the economic recovery packages will be on creating jobs and boosting incomes as we come out of the crisis. In a number of cases, low-carbon solutions can do this better than the alternatives. Renewables tend to create more jobs than the fossil industry, with the

IMAGES GETTY/ISTOCK



"Countries and industry players would be wise to shift away from risky, unsustainable investments"

number of jobs in renewable energy now topping 11m. After the 2008 global financial crisis, the US's American Recovery and Reinvestment Act of 2009 led to a number of benefits, including supporting 900,000 clean energy jobs between 2009 and 2015 – the largest clean energy investment in history. It jump-started a major scale-up of the US wind and solar industries, which are now direct competitors to fossil fuel power plants.

Similarly, assessments after the 2008–09 crisis found that, in the US, states that spent 1bn dollars on highways and roads created 2.4m job-hours, while those that invested 1bn dollars on public transit projects created 4.2m job-hours – in other words, clean public transport

infrastructure projects delivered almost double the amount of job-hours. The opportunity for greener, better jobs will prove critical as countries seek to recover from the COVID-19 crisis, especially given recent mass layoffs, the resulting rise in unemployment, and calls for better worker protection.

Governments should pay attention to investors' shifts away from fossil fuels. Investments in new exploration or development of fossil fuels are no longer worthwhile in many cases, especially given increasing oil price volatility. For three consecutive years, investment in renewable energy topped investment in fossil fuel, and in 2018, solar investments exceeded those in coal. Countries and industry players would be wise to use this moment to shift away from risky, unsustainable investments and towards more sustainable ones. Done well, this could significantly increase and improve jobs and people's wellbeing. Many countries are already transitioning: in September 2019, India announced its renewed target of 450 GW of renewables by 2030, and in March 2020, six EU states sent a joint letter to the European Commission calling for inclusion of a 100% renewable energy scenario in long-term climate projections.

During the coming months, governments will be investing

unprecedented trillions of dollars to reboot their economies. This is the moment to accelerate the shift to clean energy, rather than prop up declining industries via, for example, major bail-out packages to the fossil fuel industry. A just energy transition will be critical. Instead of directly bailing out the industry, governments can invest in the protection of affected workers and communities, and support their transition to more sustainable livelihoods and more diverse economies. In a recent letter to Canada's federal government, for example, representatives from the country's healthcare and environmental sectors called for any bailouts to focus on workers and their families. Recent ITUC analysis identifies Canada, among 12 other nations, as an exemplar of a government that is prioritising people in addressing the economic downturn.

Bold fiscal policy

Governments may also look to realign fiscal policies in order to stimulate growth and jobs. In doing so, they should look to reform environmentally harmful and inequitable subsidies and replace them with more direct payments that will lead to social and economic benefits for all. Raising carbon or energy prices is another measure that can help raise government revenues and send clear signals to markets that they should shift away from polluting activities – and with smart recycling of some of the revenues, low-income and middle-

income households can be better off as a result. Governments that pursue these efforts will emerge as leaders in climate action and bring the world closer to the benefits of old climate action. These include US\$26trn in immediate net global economic benefits between now



"Wealthy, developed nations must ensure support for developing and emerging economies"

BUILDING IT BACK – BETTER

900,000
The US's American Recovery and Reinvestment Act 2009 supported 900,000 clean energy jobs between 2009 and 2015

\$26trn

Bold climate action could lead to \$26trn in immediate net global economic benefits

4.2m

US states that invested 1bn dollars on public transit projects after the 2008 financial crisis created 4.2m job-hours

\$4.2trn

The net benefit of investing in resilient infrastructure in developing countries could be \$4.2trn during its lifetime



in the individuals and institutions serving at the frontline of the response. In doing so, wealthy, developed nations must ensure support for developing and emerging economies to cope with the crises, and for future recovery plans.

Emphasising this imperative, the UN has appealed for US\$2bn in coordinated global humanitarian response, aimed at 51 vulnerable countries across Africa, Asia and Latin America. Many Multilateral Development Banks are galvanising to ensure support for developing economies. As they support these countries in their economic recoveries, a priority should be to promote investment in sustainable and resilient infrastructure. The net benefit of investing in resilient infrastructure in developing countries could be as much as US\$4.2trn during the infrastructure's lifetime, returning, on average, US\$4 in benefits for each US\$1 invested.

The ongoing COVID-19 crisis poses a critical challenge: we must build resilience coming out of this devastating loss of lives and livelihoods without exacerbating other crises. A decisive transition to an inclusive, low-carbon and resilient economy is an opportunity to rebuild a better world – now is the time for us to seize it. [T](#)

HELEN MOUNTFORD is vice president for climate and economics at the World Resources Institute, a global research non-profit spanning more than 60 countries. The organisation helps policymakers, businesses and civil society identify and advance deep structural shifts to enhance the environment, economic opportunity and human wellbeing.



The Decade's progress Diaries

This month, like many, I have been working from home. It comes with the territory as a freelance writer – so it was a bit of a shock when, three days in, I'd written the sum total of 220 words. I can't blame it on the kids or my wife (naturally). In reality, I was far too easily distracted. Instead of writing, I spent most of the week tidying the study. Old magazines were recycled, useful ones categorised and others reread. Which brings me to the point of this column: an article I'd kept from *Newsweek* (25 October 2010) entitled '10 big green ideas'. The list is fascinating – so, a decade on, have any of them been achieved?

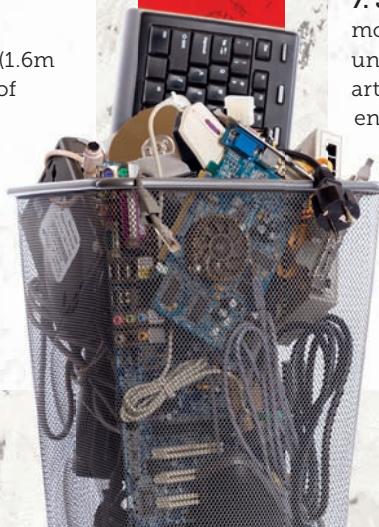
1. Make a greener burger. In 2010, this was about rearing beef without chopping down rainforests. Indeed, campaigners had only just begun to communicate the full climate impact of food consumption, in particular meat. Today we are in a very different place: a greener burger has no beef in it, as people switch to plant-based alternatives (some of which even 'bleed' like meat). For those who don't fancy that, there could soon be burgers grown in the lab, rather than on the land.

2. Invest in the improbable. Venture capitalists like to take risks on 'flaky ideas' that could take 10 or 15 years to bear fruit. A decade on, we can't afford to waste time. This year will forever be known for the coronavirus, but what the crisis has taught us is that innovation can happen far faster than we thought.

3. Get out of the gulf. In 2010 – the year of the Deepwater Horizon oil spill – the US was getting 8% (1.6m barrels) of its oil from the Gulf of Mexico, so instead of replacing this supply why not do without it? A good place to start would be to electrify 10% of America's cars by 2020, suggested one NGO. Sales of electric cars have rocketed in recent years, but some analysts suggest ownership in the US still hasn't passed 2%. There's a long way to go. The UK government has brought forward its ban on new petrol and diesel cars by five years, to 2035. Scotland has gone for 2032.



"WHAT CORONAVIRUS HAS TAUGHT US IS THAT INNOVATION CAN HAPPEN FAR FASTER THAN WE THOUGHT"



4. Catch a wave. More than 70% of the Earth's surface is covered by water, but turning waves into watts is far from easy. It remains expensive, and the impacts on the marine environment are far from clear, so it's hardly surprising that solar PV and wind continue to dominate over tidal power.

5. Drink your garbage. "Plastic is made of petroleum, so finding ways to reuse it could make us less dependent on oil," *Newsweek* noted. "And the household electronics we discard are loaded with nickel, copper and lithium, which one day could be in short supply. Why not mine our own trash?" In 2020, we all know about plastic as a pollutant. Finding ways to recycle plastic is only half the story: reduction of all single-use packaging is essential. Then there is electrical waste (which we know even less about) and food waste – so let's not spend the next 10 years focusing on straws.

6. Lighten up. "The best green ideas are the ones that save you money ... And there's no better example of that than LED lighting," *Newsweek* suggested. By 2018 LEDs took 40% of the global residential lighting market – a figure that continues to grow. Add in the quality, longer life, falling costs and energy savings, and this is a business no-brainer.

7. Shout it out loud. Perhaps the most prophetic of the 10 ideas. "Never underestimate the power of protest," the article reads. The focus was on environmental NGOs, though, not a Swedish schoolgirl. "Change is coming whether you like it or not," Greta Thunberg wrote in September 2019. In the next decade, we need bigger, better, bolder ideas. T

DAVID BURROWS is a researcher and freelance writer



The COVID-19 pandemic has brought health inequality into sharp focus, with the wealthiest among us seemingly able to access testing and treatment more easily than those from poorer backgrounds.

The UK went into lockdown less than a month after the UCL Institute of Health Equity published an analysis of how inequality has evolved during the past decade entitled, *Health Equity in England: The Marmot Review 10 Years On* (Marmot+10). This concluded that life expectancy has fallen among the poorest in society while increasing in affluent areas. This comes 10 years after the publication of *Fair Society, Healthy Lives* (The Marmot Review), which found that, the lower a person's social position, the worse his or her health was.

The latest analysis shows that these inequalities have widened and points to austerity measures as a contributing factor. It links declines in public spending to rising child poverty, falling education funding, an increase in homelessness, and various other health-related impacts, hitting minority ethnic groups and people with disabilities particularly hard. This is the legacy of the 2008 financial crash, and the Institute for Fiscal Studies has said that hundreds of thousands of people may develop chronic health conditions or mental health problems in the coming years as a result of a COVID-19 recession.

As well as threatening global climate goals and sustainable development, the economic and social response to coronavirus has the potential to exacerbate health inequalities and instigate a breakdown in social cohesion. Although the immediate effects of the coronavirus lockdown will eventually pass, questions around the equity and sustainability of healthcare provision are only likely to intensify, and the solutions on offer could deliver vastly different outcomes.

I asked three experts to give their take on Marmot+10, and to suggest how we can avoid simply moving from one health crisis into another. T

A new report on health equity has stark implications for UK policy – particularly taking into account COVID-19, says **Chris Seekings**

From one health crisis to another?



Inequalities in health: What we know, what we need to do



DR JESSICA ALLEN

Deputy director,
UCL Institute of Health Equity

"COVID-19 will cause
inequalities to worsen"

Marmot+10 found deteriorations in health and health equity in England, particularly in poorer communities and areas outside London and the South.

Since 2010, life expectancy improvements in England have stalled – something that has not happened since 1900. Health inequalities have increased, and for poorer women, life expectancy actually fell in 2010-12 and 2016-18. There are marked regional differences; the largest decreases were seen in the North East's most deprived neighbourhoods, and the largest increases in London's least deprived neighbourhoods. It is likely that social and economic conditions have undermined health, and these will almost certainly widen as a result of COVID-19.

The report assessed how policies, particularly austerity, have likely driven these deteriorations. It makes recommendations in several health equity domains – early years, education, working conditions and employment, income, welfare systems, and housing and communities – reversing cuts and making proportionately greater investments down the social gradient, as well as in the North and Midlands and ignored communities across England. It proposes government develop a health inequality strategy involving a cross-department cabinet-level group. This will become more critical as COVID-19 causes inequalities to worsen.



CHRISTOPHER SNOWDON

Head of lifestyle economics,
Institute of Economic Affairs

"Life expectancy is
closely linked to GDP"

Life expectancy rose between 2010 and 2018, from 78.4 to 79.3 years for men and from 82.4 to 82.9 years for women. Just a week after Marmot+10 was published, the Office for National Statistics released provisional figures showing a further rise of four months between 2018 and 2019.

The picture is, therefore, less bleak than has been portrayed. Three claims seem to be true: there was a slowdown in life expectancy growth during the 2010s, it was more marked in the UK than in many other countries, and it was greater among low-income groups. Marmot suggested spending cuts were partially responsible, although he made this case more forcefully to the press than in his report, which offered little evidence.

It is difficult to imagine what kind of evidence could prove the hypothesis. It is plausible that inadequate funding of health and social care could cost lives, but it is equally plausible that sluggish economic growth following the recession was responsible: it is well established that life expectancy is closely linked to GDP.

We should be most concerned about unequal healthcare access. GPs in the poorest areas are responsible for 370 more patients than those in the richest areas, according to the Health Foundation, and GP numbers have fallen 50% faster in poorer areas in recent years. This cannot be blamed solely on NHS spending, which has risen.



DAVID BUCK

Senior fellow covering public health and health inequalities, The King's Fund

"We need a pan-government approach"

Marmot+10 marshals evidence across five of the original review's themes: the best start in life; maximising capability and control over our lives; fair employment and good work; a healthy standard of living; and healthy and sustainable places and communities. There is more judgment than in the first review (particularly on spending cuts in deprived areas). It is stronger on the role of local and regional policies and 'place', and on poverty and ethnicity. It calls for a cross-government health inequalities strategy, and specific actions.

Marmot+10 was preceded by the All-Party Parliamentary Group on Longevity's report *The Health of the Nation*. The emphasis of this is more on what the government must do to meet its Ageing Society Grand Challenge: increasing healthy life expectancy by five years by 2035 while narrowing inequalities. It recommends a pan-government approach, action on health behaviours, tripled NHS spend on prevention, a stronger role for business, support for 'left behind places', and a social movement for health.

These reports will be even more important as we recover and learn from COVID-19. Which groups suffered more than others? Why? How can ensure inequalities don't widen further? This relates as much to the economic impacts as to direct consequences of the virus.

Out of the woods

The UK urgently needs to step up tree planting and create woodlands to meet climate targets. **Huw Morris** reports



Darren Moorcroft believes the picture has never been bleaker. The chief executive of the Woodland Trust says more woods are under threat than at any time in history. Tree planting rates are the lowest in decades. One in 10 wildlife and plant species faces extinction.

Diseases and pests threaten millions of native trees.

"We've seen a lot of talk about trees and that is welcome, but we've yet to see the action," he says. "We've left ourselves a phenomenal amount to do in a very short space of time. The moment of crisis has come, and action needs to be taken."

Last year's clarion call by the Committee for Climate Change (CCC) focused minds. It recommended planting more trees and woodlands if the UK is to have any chance of reaching net-zero carbon emissions by 2050, setting a target of 17-19% tree cover across the country. This means tree planting on an unprecedented scale. The UK is one of the least wooded countries in Europe, with just 13% tree cover compared to the continental average of 37%. The 6% increase envisaged by the CCC equates to around 1.5m hectares of additional woodland.

Only 1,420ha of trees were planted in England in the year to March 2019, against a 5,000ha government target. Wales and Northern Ireland planted 500ha and 240ha respectively. Total tree cover is unchanged at 10% in England, 15% in Wales, 19% in Scotland and 8% in Northern Ireland.

The government is committed to planting 30,000ha of trees a year across the UK by 2025, and its 25-Year Environment Plan

"We've left ourselves a phenomenal amount to do"

PUBLIC GOOD

Environmental Land Management Scheme



The Agriculture Bill aims to provide the legislative framework for replacing support schemes to farmers and landowners following the UK's departure from the EU's Common Agricultural Policy. It introduces the concept of 'public money for public goods'.

The government will pay farmers for producing 'public goods' such as better air, water quality and soil, higher animal welfare standards, improved access to the countryside and measures to reduce flooding, as well as tree planting and woodland creation.

The new Environment Land Management (ELM) scheme is the key mechanism for this, under a three-tier model:

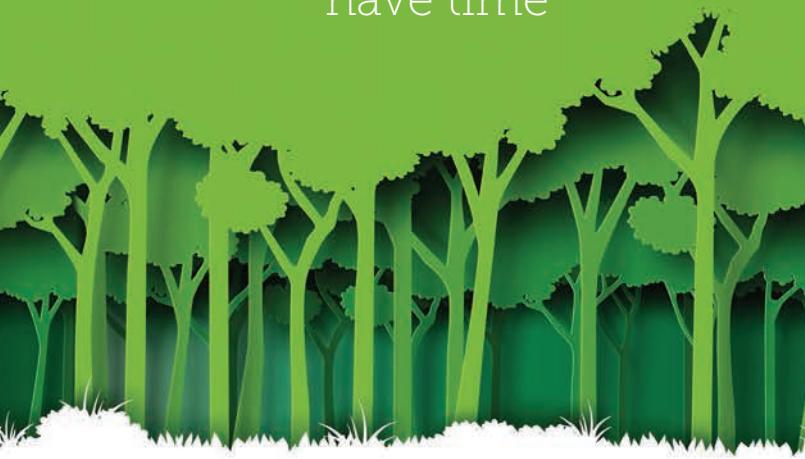
- **Tier 1** focuses on incentivising environmentally sustainable farming and forestry, such as cover crops
- **Tier 2** could be designed to support land managers to deliver

locally targeted environmental outcomes
● **Tier 3** intends to focus on delivering landscape scale land-use change projects, such as tree planting.

The test and trial period began in 2018 and is ongoing. It aims to find out how to make the scheme implementable. It is considering issues such as payment by results, reverse auctions, how to value environmental outcomes, the kind of expert advice needed to make the scheme work, and how to foster close cooperation between landowners and farmers. A national pilot will follow, and the government envisages rolling out ELMs between 2024-2027.

"How exactly the concept of 'public money for public goods' will be implemented is therefore still in the test-phase," says Judith Tsouvalis, University of Sheffield research fellow in geography.

"We can't afford to make the wrong decisions about how and where we expand tree cover. We don't have time"



aims to increase woodlands to 12% in England by 2060. The CCC admits achieving this "would require significant scaling up across the sector, from research into the most appropriate species to plant across the country, scaling up the nursery sector to grow the saplings, to actual planting on site".

Forestry Commission forest service director Richard Greenhous outlined eight challenges at a recent Ecosystems Knowledge Network conference, with strong leadership and political support topping the list. This needs to be backed by substantial investment – the government has earmarked a £640m Nature for Climate Fund for tree planting during the next five years – as well as quality trees sourced from a strong nursery sector, and land to plant on, particularly in the face of housing and infrastructure demands. Woodland creation will also need people to collect seeds, nurture stock, and regulate and plant woodland. In addition, the right trees need to be in the right places. All this should be sustained by woodland management, and trees will need protecting from pests.

One key element will be how the new Environmental Land Management Scheme, heralded by the Agriculture Bill currently before Parliament, encourages tree planting by farmers and landowners (see *Environmental Land Management Scheme* box).

All this leaves Moorcroft issuing a clarion call of his own. "Previous governments have tried to dramatically increase tree planting rates before," he says. "In doing so, some of our finest wildlife sites were damaged. We can't afford to make the wrong decisions about how and where we expand tree cover. We don't have time." [†]

HUW MORRIS is a freelance journalist

IMAGES: GETTY/ISTOCK

Mitigation

BOOSTING TREE COVER

Woodlands across the UK



In England, the government launched the £50m Woodland Carbon Guarantee last November to encourage farmers and landowners to plant more trees and create woodlands in return for payments as those trees grow. Under the scheme, participants will be offered the option to sell 'woodland carbon units' to the government over 35 years at a guaranteed price set by auction, providing new income for land managers who help compensate for carbon emissions.

Elsewhere, the government supports woodland creation through Countryside Stewardship (CS) grants and the Woodland Carbon Fund (WCF). The Forestry Commission also provides the Woodland Creation Planning Grant for landowners to prepare woodland creation plans, which can then be used to apply for either CS or WCF grants. The CS will support woodland creation until the new ELM is rolled out in late 2024 after three years of pilots.

In March, the Forestry Commission launched the latest round of the Urban Tree Challenge Fund for community and volunteer groups, town councils and individuals to apply for a share of a £10m pot to increase tree numbers in urban areas through small-scale planting projects. The fund aims to support the

planting of more than 130,000 trees across England's towns and cities.

The Welsh government has unveiled plans for a national forest, which would see existing woodland joined up with newly planted areas. Under its 'connected ecological network', inspired by the Wales Coast Path, people could walk the entire length of the forest, from one end of the country to the other. However, no official map exists yet. Meetings and events with businesses, landowners and communities are scheduled during the coming months to develop the scheme.

The Scottish government met its annual tree planting target for the first time last year, with 11,200ha. Most of the planting was by the private sector, with around 1,000ha down to the government agency Forestry and Land Scotland. Forests cover about 18.7% of Scotland's land mass, and there is a target to increase that figure to 21% by 2032. Scotland accounts for 84% of all new planting.

Northern Ireland significantly needs to increase tree planting if it is to help meet the UK target. It needs to plant 2,000ha of trees a year to hit an existing target of 12% cover by 2050, according to the Woodland Trust. In 2018/2019, only 240ha were planted.



HS2 HIGHLIGHTS

- 2,000 businesses have delivered work on HS2. SMEs represent 70% of the supply chain, with 99% representing UK-based companies.
- HS2 has supported sustainable improvement within its supply chain, putting out challenges to the market at Tier 1 and Tier 2 levels.
- Air quality impacts have been mitigated (surpassing the EU air quality emission standard) by developing route-wide 'Euro VI' emissions standards for on and off-road construction vehicles and equipment.

High Speed Two

Robert Slater and **Hannah Rich** discuss HS2's strategic support for sustainable engagement with businesses and SMEs, which led to them winning IEMA's Supply Chain Management Award

How large is your procurement team?

Robert Slater: Since 2013, HS2 hasn't done as much work on the ground, so our procurement team covers the end-to-end commercial lifecycle. We have supply chain management, and at the front end are procurement teams. Then there's a commercial team and a supply relationship management team – so it's expanded.

Did you follow a framework for sustainability to align with standards such as the UN SDGs?

Hannah Rich: We looked at the HS2 benefits from a sustainability perspective, and they were based around the business case. As our sustainability team started doing more work around the SDGs, we looked at aligning the benefits and KPIs with those SDGs.

How did you measure your outcomes?

HR: We have a monthly reporting tool for all our contractors and also a benefits reporting tool, which gather lots of data. Our specialists review how we are performing against various targets and identify any issues. We get information from the KPIs and develop dashboards. We look at how the contractors and their supply chains are performing, and how we can make improvements. We share best practice and lessons learned.

The judges were impressed with the engagement of local businesses and SMEs – how did you secure this?

RS: It's been at the core of our supply chain engagement strategy, because in construction, SMEs are a huge part of

the supply chain. It's where you find a lot of the innovation. We've met with trade associations and business networks across the country to engage with SMEs so they can understand HS2 as a project.

To open up opportunities within the supply chain, we use a subcontract portal called CompeteFor, which is where our Tier 1 contractors publish their supply chain opportunities. We also host 'meet the contractor' events. Construction can be a 'boom and bust' industry, so it's all about providing that pipeline of opportunity.

How did your supply chain roadshows promote sustainability?

RS: They enabled us to get out and meet organisations that were going to be working both directly and indirectly for us, so they could see what we stand

"50% carbon reduction is a massive commitment for a construction project"

for and what they needed to work on if they wanted HS2 contracts – such as our equality, diversity, skills and employment agenda. We travel all around the country to ensure that all organisations can bid for and win HS2 contracts.

Did the public perception of the HS2 project create any problems?

RS: It's been a challenging year. Now we

have certainty, we continue to engage not just in England, but also in Scotland, Wales and Northern Ireland. When it's up and running, benefits will come through increased capacity on the rail network, reducing lorries and cars on the road and decreasing the amount of freight on, for example, the existing West Coast mainline. High speed rail is a very low-carbon method of travel, so sustainability has many meanings – both during construction and during the operation of the railway.

HR: It's difficult to compare the positive and negative aspects. There will be environmental damage during construction, but also a lot of long-term environmental gain with improved air quality and benefits around the supply chains and the economy. The environmental minimal requirements go above and beyond any project that I've ever worked on in the UK – a 50% carbon reduction is a massive commitment for a construction project. It will be the first major project to look at targeting no net-loss, and potentially a net-gain, in biodiversity.

How did you find the awards ceremony? How did it feel to win?

RS: The awards ceremony was great. From a personal perspective, it was great to understand what other teams and projects have been doing in this sphere. As supply chain managers we always want to learn from best practice across a range of industries. ☺

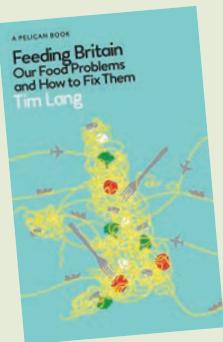
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SOCIAL AND COMMUNITY NEWS FROM IEMA



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New books we recommend



Feeding Britain: Our Food Problems and How to Fix Them

Professor Tim Lang, City, University of London

- How does Britain get its food?
- Why is our current system at breaking point?
- How can we fix it before it is too late?

This book looks at the UK food system: where it comes from, what we eat, its impact, fragilities and strengths. It is a book on the politics of food, arguing that the Brexit vote will force us to review our food system.

Feeding Britain argues that current approaches are short-sighted, against the public interest, and possibly even strategic folly. Setting a new course for UK food is no easy task but it is a process, this book urges, that needs to begin now.

● Pelican Books, RRP £25



Too Hot to Handle? The Democratic Challenge of Climate Change

Professor Rebecca Willis, Lancaster University

Scientists are clear that urgent action is needed on climate change, and world leaders agree – yet climate issues barely trouble domestic politics. This book explores a central dilemma of the climate crisis: science demands urgency; politics turns the other cheek. Is it possible to hope for a democratic solution to climate change?

Based on interviews with leading politicians and activists, and the author's 20 years on the frontline of climate politics, it explores why climate is such a challenge for political systems, even when policy solutions exist. It argues that more democracy, not less, is needed to tackle the climate crisis, and suggests practical ways forward.

● Bristol University Press, RRP £12.99

QUOTE
UNQUOTE



Will life actually become more stressful when the lockdown is lifted (for those not on the front line)?

- 1) Visit family and friends
- 2) Do 6 months work in 3
- 3) Go on a round-the-world trip before the next outbreak

Or will we have gained perspective from slowing down?

@MAREKBIDWELL

Feeling motivated to continue work on #sustainability as we work towards emerging out of the current crisis. Thanks **iemanet & @SocEnv_HQ** for this opportunity & honour! Look forward to being a part of the Chartered Environmentalist network.

@DASMEGHNA



Haven't had a chance to properly sit down & read **iemanet** Transform magazine for ages. Slowing down, sitting in the garden, sun shining, bees buzzing & birds singing loudly. (Don't think the front cover is aimed at them!)
@ESHCON

Well done for **iemanet** offering a series of webinars during #COVID19gb.
@PHILLIPJCLARKE

Massive congratulations to James Ennis, our Senior **#Sustainability** Consultant Seedling, for attaining the Full Membership **iemanet** to become a Chartered Environmentalist!!
@ARUPENVIRO



Why did you become an environment/sustainability professional?

As a young person, acid rain, animal rights and oil spills caught my attention. My geography teacher took us on trips to former coal mining communities that; she challenged us to think about how to support the people as well as the environment. I studied environmental science and geography at university.

What was your first job in this field?

I was a community environment worker in Bradford, helping a deprived community improve their homes and the area. I learned that perfect solutions are not enough – you have to get on with people and work with their priorities, fears and motivations. I also worked on city and regional sustainability strategies and in professional service companies, latterly as global head of sustainability.

How did you get your first role?

I saw it in a newspaper.

What does your role involve?

I focus on creating a more sustainable built environment, looking at how organisations work and advising on technical projects. I lead community planning processes and provide expert sustainability project reviews.

How has your role changed or progressed in the past few years?

Earlier in my career, a sustainability specialist was expected to know a lot about a heck of a lot; there are now many specialisms. My role is often to diagnose the issues, find a team of specialists, engage the right stakeholders, reframe problems and enable collaboration.

What's the best part of your work?

The people I get to work with – there's



CAREER PROFILE

Lynne Ceeney

FIEMA CEnv

Self-employed sustainability consultant, Lytton Consulting Ltd

always something to learn – and sharing disparate expertise and perspectives.

What's the hardest part of your job?

Running a small consultancy can be lonely. Finding supportive networks is helpful, and biscuits are important.

What was the last development event you attended?

A mental health first-aid course.

What did you bring back from it?

Awareness about the issues that people I work with might be dealing with behind the scenes and how to help in a crisis, as well as tips for my own mental health.

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

The ability to relate to people from all backgrounds and professions. The best solutions and innovations are pointless if people don't want to implement them.

Where do you see the profession going?

The hole in the ozone layer caught the attention of professionals, the public and politicians in the 1980s, and policy, technical and social levers were used to

"No single sector has all the solutions or all the responsibility"

address it. Today's imperative is climate change and no single sector has all the solutions or all the responsibility. I hope our profession will bring technical solutions to the fore, but also work in the social sphere to find the right levers to bring about change.

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

Working on really interesting projects and effecting change.

What advice would you give to someone entering the profession?

Perfection is an obstacle to progress.

How do you use the IEMA Skills Map?

I use it periodically to review my CPD.

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

Integrity, passion, humour.

What motivates you?

My time as a trainee paramedic in West Yorkshire. I saw first-hand the appalling impact that a poor environment can have on people.



What would be your motto?

Sustainability with a smile – take people with you on the journey.

Greatest risk you have ever taken?

Telling my then director that I needed him to make a good case at the Board – it was their decision whether or not a project could have the resources I needed in order to deliver it; if they could not release them, I would have to step back. I got the resources.

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

Mo Mowlam. She helped unpack and progress a really wicked issue – the peace process in Northern Ireland. 



IEMA Sustainability Impact Awards 2020

Inspiration | Innovation | Transformation

Don't miss your opportunity
to be recognised.

We're all facing an unprecedented health emergency, but we at IEMA are still here to support our members and champion your great work as together we transform the world to sustainability.

With a landscape that seems to be shifting on an almost daily basis, these aren't normal circumstances for any of us, so we have made the decision to extend the entry deadline for the IEMA Sustainability Impact Awards to **midnight on Thursday 14 May**.

During these extraordinary times, we feel it is still important to recognise the work of individuals, teams and organisations in our profession - so that we can showcase the vital role that environment and sustainability professionals can play, and build this into the recovery process when this crisis is over

If you have any further questions, please don't hesitate to contact us at enquiries@iemaawards.net.

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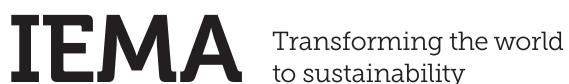
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