

TRANSFORM

FOR ENVIRONMENT AND SUSTAINABILITY PROFESSIONALS

Environment Economy Society

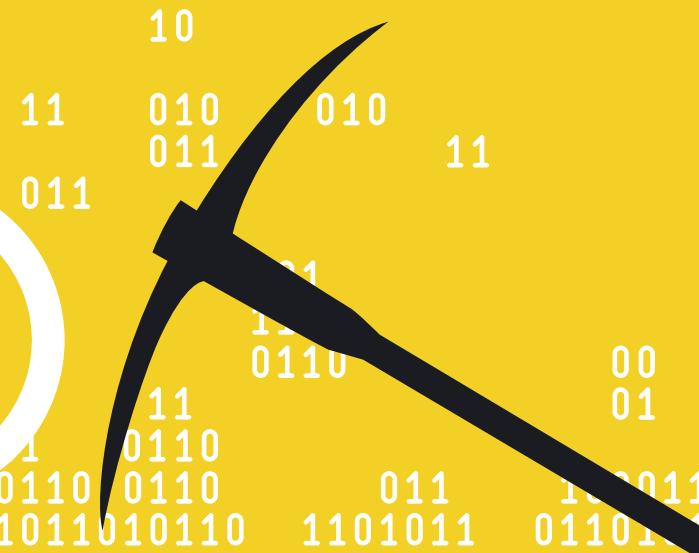
Apr/May 2022

www.iema-transform.net



Miner threat

Bitcoin's enormous appetite for energy



PLUS

Choppy waters Dame Ellen MacArthur on the circular economy
Express train Upskilling and retraining for the green job revolution
What's in an aim? Why sustainability targets may not be helpful

IEMA

Transforming the world to sustainability



GLOBAL CERTIFICATION BODY

SUSTAINABILITY. SIMPLIFIED.

Demonstrate your commitment to sustainability and ensure your environmental claims are credible, transparent and robust with our independent training and certification services.



**GHG Inventory
Verification**



**PAS 2060
Carbon Neutrality**



**ISO 14001
Environmental Management**



**ISO 50001
Energy Management**

Visit nqa.com/sustainability to start your journey

**50,000
CERTIFICATES
GLOBALLY**



**100%
TRANSPARENT
FEES**

**1000+
EMPLOYEES
WORLDWIDE**

AVERAGE
CUSTOMER
PARTNERSHIP



**OPERATING
COUNTRIES**

Contents

APR/MAY 2022

Upfront

04 Comment

We mustn't let conflict alter our course away from renewable energy, says Martin Baxter

05 Industry news roundup

07 IEMA news

All the latest news and updates

10 IEMA Opinion

Tom Pashby on the problems with using only GDP as an economic indicator

Regulars

12 Legal brief

Regulations, consultations and court news

32 The big question

Is ESG investment effective?

Connect

34 Member profile

Martin Gettings, FIEMA CEnv, head of ESG for Brookfield's European real estate business

35 Events

Web exclusive

COP26's implications for UK nature recovery

Henry Collin considers the conference's outcomes in the context of biodiversity and nature
bit.ly/NatRecov



FEATURES

14 Interview: Dame Ellen MacArthur

The record-breaking yachtswoman discusses her journey to circular economy advocacy, and the part that collaboration will play in achieving zero waste

17 Skills

Catherine Early assesses the Scottish government's progress on green jobs against its stated aims

20 Education

A focus on relationships is needed to improve teaching, says Rachel Musson

21 Economics

Angus Hanton warns of an intergenerational ticking time bomb

22 Energy

Bitcoin mining could have a catastrophic effect on energy consumption, say Jamie Gleave, Mary Maguire and Sean Condon

25 Business

David Burrows reports on environmental targets in the business world – do they really help to achieve anything?

28 Climate finance

More must be done to help developing nations prepare for climate change, Dr Barbara Buchner tells Chris Seekings

31 Climate mitigation

Gary Walpole looks at the role of roofing in climate adaptation

MARTIN BAXTER, DEPUTY CEO AND DIRECTOR OF POLICY AND EXTERNAL AFFAIRS, IEMA

Staying the course

Hello, and welcome to another edition of *Transform* magazine. We hope this finds you safe and well, and that you are having a productive and successful year so far.

The war in Ukraine brings into sharp relief the overwhelming destruction and consequences of armed conflict, and the suffering it imposes on an innocent civilian population. Our hearts go out to our Ukrainian members, their families and everyone affected as this devastating humanitarian crisis unfolds.

The effects of the war will be seen around the world as international sanctions take hold; already we're seeing dramatic increases in energy and food commodity prices, which will most impact the poorest in society. Much attention is being given to energy supply as oil and gas markets tighten and costs rocket – with some strongly advocating increases in fossil fuel production, including UK shale gas extraction, and setting aside our net-zero commitments under the headline cost.

Such an approach is deeply flawed and totally misguided; accelerating the transition to a net-zero future significantly enhances energy security and, as the costs of renewable deployment continue to fall, the case for accelerating the transition to a clean energy future becomes more compelling.

While much focus is on energy supply, insufficient attention is being given to energy demand. Cutting energy consumption is the quickest, cheapest and cleanest way to tackle energy security and cost issues in the short term, and everyone can play a part. Deep dives into energy and resource efficiency will be critical for many businesses if they are to survive the economic challenges that are likely; our interview with Dame Ellen MacArthur on page 14 highlights how circular economy principles and system change can reduce consumption and enhance sustainability. It's a sharp contrast from the incredibly energy-intensive cryptocurrency mining explored by Jamie Gleave, Mary Maguire and Sean Condon on page 22.

I very much hope you enjoy the magazine. As always, if you have any comments, thoughts or ideas for articles, please do let us know.

"Accelerating the transition to a net-zero future significantly enhances energy security"



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.

IEMA
The Old School House, Dartford Road,
March, PE15 8AE
tel: +44 (0) 1522 540069
info@iema.net | www.iema.net

Editor
Sharon Maguire
sharon.maguire@redactive.co.uk

Features and news journalist
Christopher Seekings
christopher.seekings@redactive.co.uk
iema@redactive.co.uk

Sub-editor
Kate Bennett

Business development manager
Dywayne Ramsundar
tel: +44 (0)20 7880 7613
dywayne.ramsundar@redactive.co.uk

Sales
tel: +44 (0) 20 7880 6206
sales@iema-transform.net

Senior designer
Gary Hill

Picture editor
Claire Echavarry

Subscriptions
subscriptions@iema-transform.net
The 2022 annual subscription rate is £142.

Production manager
Aystha Miah-Edwards

Printer
Warners Midlands PLC, Lincolnshire

Published by
Redactive Publishing Ltd
Level 5, 78 Chamber Street, London, E1 8BL
tel: +44 (0) 20 7880 6200
www.redactive.co.uk

 **redactive**

© IEMA 2022

This magazine aims to include a broad range of opinion and articles that do not necessarily reflect the views of IEMA; nor should such opinions be relied upon as statements of fact.

The income generated from advertising included in *Transform* goes towards the production and distribution costs of the magazine, leaving more of your membership fee to help us in our mission to transform the world to sustainability.

All rights reserved. No part of this publication may be reproduced, transmitted in any form or by any means, electronic, mechanical or otherwise, without the prior written consent of the publisher and editor.

ISSN 14727625

 **MIX**
Paper from
responsible sources
FSC® C017177

 **recycle**

 The paper used to print *Transform* comes from sustainable sources. Visit: transform.iema.net/think-green.

ROUNDUP

ENVIRONMENT &
SUSTAINABILITY
NEWS AND VIEWS

FINANCE

Financial sector urged to cut Russian fossil fuel ties

A coalition of NGOs and environmental groups have called on financial institutions to stop "propping up" the war in Ukraine by cutting ties with Russia's fossil fuel industry. In a letter to CEOs, they call on insurers, banks and asset managers to end financing, investment, insurance coverage and other financial services to companies in the Russian industry, and divest from existing assets.

Oil and gas sales made up 36% of Russia's budget last year and have allowed the country to build up US\$470bn in foreign reserves. In addition, Morningstar estimates that 14% of ESG investment funds are exposed to Russia.

The NGO coalition – which includes Greenpeace, Rainforest Action Network and Sierra Club – has listed 60 major oil, gas, and coal companies either headquartered or active in Russia, which it believes should be excluded. "The war that Putin has begun by invading Ukraine is a stark reminder of the connection between justice, peace and climate change," the letter states. "As the Ukrainian climate scientist and IPCC [Intergovernmental Panel on Climate Change] report co-author Svitlana Krakovska said, 'human-induced climate change and the war on Ukraine have the same roots – fossil fuels – and our dependence on them,' and the intensification of climate change will increase international tensions and conflicts."

There are signs that national governments will look to increase fossil fuel production following Russian import bans. The UAE has indicated it will encourage fellow OPEC members to increase oil production after prices jumped by more than 30%, while several US oil majors have also signalled their intention to raise output. Prime minister Boris Johnson has said that the UK may have to increase its domestic gas and oil production, potentially opening the door to more drilling in the North Sea.

INCLUSIVITY

Green jobs risk widening gender employment gap

The global energy transition could widen the gender employment gap if nothing is done to improve female representation across three key sectors, new analysis suggests.

The findings from PwC show that the move to net-zero emissions is likely to result in net job creation in OECD economies, with new green jobs in the utilities, construction and manufacturing sectors.

However, these sectors are all male dominated – currently employing 31% of the male workforce, but just over 11% of the female workforce. If nothing is done to improve this, the analysis suggests the employment gap between men and women will widen by 1.7%, rising from 20.8% in 2020 to 22.5% in 2030.

"It is clear that building a truly inclusive and equal workplace still requires significant focus and support from governments, policymakers and businesses," said Ian Elliott, chief people officer at PwC UK.



POLLUTION

UN plastic treaty 'most significant since Paris'

The UN has approved a resolution to create the first global treaty on plastic pollution, calling it "the most significant environmental multilateral deal since the Paris accord".

The treaty is set to be finalised by the end of 2024, and will deliver a "legally binding instrument" to address the full lifecycle of plastics, the design of reusable and recyclable products and materials, and the need for enhanced international collaboration. The UN Environment Programme will convene a forum so stakeholders can share knowledge. It will facilitate discussions and ensure they are informed by science.

Around 11m tonnes of plastic waste enter the oceans each year; scientists fear this could triple by 2040.

"Plastic pollution has grown into an epidemic," said Espen Barth Eide, president of the fifth session of the UN Environment Assembly. "With today's resolution we are officially on track for a cure."



There's a new subscription on the block!

In our 28th year of making legislation simple, we're delighted to introduce Ireland legislation to the Cedrec Energy, Environment and Safety subscription family.

Subscriptions are also available for England, Wales, Scotland, Northern Ireland and the EU.

Come and take a look and register for a trial, or book a demo at cedrec.com

Fáilte!

Welcome to Cedrec, Ireland!



0191 4906700
cedrec.com

Do you want to help decarbonise society?

Want to work on multidisciplinary projects supporting the essential infrastructure and services upon which society depends? Keen to shape the development of climate resilient, low carbon projects in the clean energy, (nuclear and renewables), defence, transport (rail and aerospace) and heavily industrialised sectors?

Join us! We're looking for motivated and passionate people who share our values and want to make a positive impact on the world. Ideally, you'll have experience of one or more of:

- Carbon analytics, including scope 1, 2 and 3 carbon calculations, baselining and modelling
- Decarbonisation: strategy, roadmaps, supply chain and technology
- Assessment of climate related risk, resilience, and opportunity (TCFD, CIRAM)
- Environmental management systems and compliance
- Environmental permitting for nationally significant infrastructure projects
- Social value
- The circular economy.

Our work is at the cutting edge of decarbonisation and environmental management, in sectors critical to national infrastructure, security and the economy.



Our people *join us* to make a positive impact on the world, and to learn from some of the best minds in the industry. They stay because they value our highly supportive team environment and the career opportunities provided by our sustained growth.

Interested? Visit www.fnc.co.uk/sustainability or our LinkedIn pages to find out more, or email our recruitment team on rec1@fnc.co.uk for further information.



BIODIVERSITY

IPCC report warns of damage to ecosystems

In February, the Intergovernmental Panel on Climate Change (IPCC) published the second part of its Sixth Assessment Report, *Climate Change 2022: Impacts, Adaptation and Vulnerability* (bit.ly/AR6_Impacts). It included detailed information about the impacts of climate change on ecosystems and biodiversity.

The report states that, globally, there has been substantial, and some irreversible, damage to terrestrial, freshwater and marine ecosystems, and that the extent is larger than expected. Ecosystems have reduced in number but also in resilience, ability to adapt, structure and function; there have also been changes in seasonality. Some of the differences include increased



tree mortality from droughts, loss of kelp forest, and warm water coral bleaching and mortality. Some species, such as those in polar regions, will face temperatures beyond their historical experience during the next 10 years. Changes to land, freshwater and marine environments will affect livelihoods and security, including water security and food production.

There are adaptation options, many of which will be familiar. The key is protecting and restoring ecosystems and biodiversity: minimising harmful impacts, reducing fragmentation, and improving and increasing natural habitats, connectivity and heterogeneity. The report emphasises that this must be done using the right approaches

in the right places, taking into account scientific information, indigenous knowledge, community knowledge and practical expertise.

The challenge is for businesses and governments to not only count and reduce carbon, but also understand and reduce their impacts on biodiversity and ecosystems and create environmental net gain. IEMA's publication *Biodiversity Net Gain – Good practice principles for development* (bit.ly/IEMA_BNGprin) provides guidance for practitioners in this area.

IEMA supports the UK Biodiversity and Business Forum (www.business-biodiversity.co.uk), which helps companies understand the value of nature and integrating nature into their value chains and decision-making.

PUBLICATION

Impact Assessment Outlook Journal: Strategic Impact Assessment

Volume 12 of our *Impact Assessment Outlook Journal* brings together articles on strategic impact assessment to inspire practitioners. Guest edited by Ellie Askham of the Environment Agency and Josh Fothergill of Fothergill Training and Consulting, both of whom are members of the IEMA Strategic Impact Assessment (SIA) Working Group, it comprises eight articles that outline present practice and challenge practitioners to move their approaches forward and embrace innovation.

The role of SIA is more important now than ever before. It is critical that sustainability is embedded in policy and programme-making, and is used to influence and shape them.

During the next year, the SIA Working Group will develop more content for members, as well as engaging with opportunities to further enhance SIA's application, including the English review of the planning

system and Scotland's adoption of the fourth National Planning Framework and what this will mean for strategic environmental assessment practice. SIA is adaptable, and we look forward to working with IEMA members and other practitioners to respond to the challenges and opportunities presented by the climate emergency, and the need to develop a circular economy, respond to the biodiversity crisis and address inequalities.

If you are interested in becoming involved in the Strategic Impact Assessment Working Group, contact ia@iema.net

You can view all editions of our *Impact Assessment Outlook Journal* at bit.ly/IAOutlookJournal



POLICY

Supporting green skills and jobs

Major legislative shifts and new policy initiatives point to a brighter future for the natural environment.

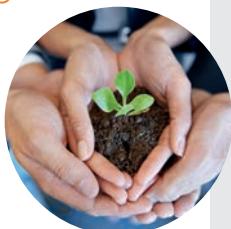
They include the development of long-term targets in areas such as air quality and biodiversity, the cross-departmental environmental principles statement being drawn up by Defra, and the establishment of the Office for Environmental Protection.

It took a long time to get the Environment Act over the line, but it does seem that the building blocks for a greener society are being put into place. However, while the Act and various policy developments stemming from it are important, they alone will not be enough to ensure the delivery of outcomes that better support the natural environment. Achieving this will require wider interventions, including a robust plan for developing green skills and jobs. IEMA called on the government to establish a National Green Skills and Jobs Strategy at the beginning of 2021, and would still encourage this.

There is an onus on industry and on us, as the UK's largest professional body for environment and sustainability professionals, to drive this forward. In partnership with Deloitte, we are developing a series of tools to help organisations assess their staff's readiness to participate in the green economy and identify practical steps that can be taken to increase preparedness.

This isn't just about increasing the number of sustainability roles that exist across the economy: it is also about ensuring that sustainability skills exist in roles that support better environmental outcomes, for example in finance and procurement.

The tools and resources under development with Deloitte will be published in due course.



CONSULTATION

Biodiversity gain regulations and implementation

Defra's consultation on biodiversity net gain (BNG) regulations and implementation (bit.ly/Defra_BNG) looks at how to enact BNG within the planning system, as set out in last year's Environment Act.

IEMA hosted a well-received webinar on 11 February, at which Max Heaver, BNG policy and legislation team lead at Defra, and Nick White, principal adviser on net gain at Natural England, discussed the consultation with members. At the beginning of March, IEMA also held two member workshops to dive deeper into the details.

The consultation is substantial and, perhaps unsurprisingly, some common questions have developed among members of IEMA.

One of the most significant concerns how to ensure that biodiversity is enhanced on-site, where impacts have taken place, rather than off-site. Off-site

compensation, including the purchase of biodiversity units or statutory credits, might be more attractive to developers because of their ease of acquisition (especially in terms of time), and because the 30-year maintenance and monitoring responsibilities would not lie with the developer.

There are also questions about how to ensure that on-site gain is maintained. Where biodiversity units and statutory credits are proposed as part of a register, on-site compensation and gain will be self-regulated, and seem unenforceable. There is potential for there to be a net loss of biodiversity.

One solution might be to set up a register or method for reporting ongoing on-site gain (or loss) and for this to be monitored in the same way as off-site and biodiversity units and credits.

IEMA's full response to the consultation will be published in April.





CONSULTATION

Banning commonly littered single-use plastic items in England

Almost a year after the government banned plastic straws, cotton buds and drink stirrers, Defra has consulted on a proposal to ban more single-use items (bit.ly/Defra_SUP). The consultation focuses on commonly littered items that have not been sufficiently addressed by existing policies or proposals, and works towards the 25-year Environment Plan and eliminating avoidable plastic waste by 2042.

The new proposal suggests banning the supply of:

- Single-use plastic plates
- Single-use plastic cutlery
- Plastic balloon sticks
- Expanded and extruded polystyrene food containers
- Expanded and extruded polystyrene beverage containers.

IEMA ran a workshop with Circular Economy Network Steering Group members to gain insights, and to discuss gaps and issues within the proposals.

The unanimous feedback was that banning unnecessary single-use plastic items is a good move for the environment, but caution is needed to ensure that the alternatives do not have unintended consequences, such as increased greenhouse gases.

IEMA also made recommendations to ensure that definitions are consistent and that the government uses EU taxonomy. Decision-making needs to be scientific and evidence-based, with the inclusion of circular economy

principles. New products coming to market need to be supported at the conception stage and environmentally balanced, meaning multiple environmental criteria are used to measure against causing environmental harm.

In its response, IEMA calls on the government to support and help create a scientific and evidence-based measurement of circularity, with a threshold that deems a new product circular enough to be put on the market. This would support the Green Claims Code and provide a consistent approach for reducing plastics' harm to the environment, while using consistent definitions.

IEMA has offered its support to the government to develop a model for single-use plastic alternatives, ensuring circularity is at the top of the decision-making hierarchy.

To find out more, contact policy@iema.net. Read the full IEMA submission at bit.ly/SUP_DefraResponse



"Caution is needed to ensure that the alternatives do not have unintended consequences"



The UK economy has seen huge changes since records began, with governments swinging from massive investment in public services to privatisation and the pursuit of a small state. This year's Budget came at a time when the cost-of-living crisis is making some people choose between heating and eating, while the wealthiest in society enjoy historically low taxation.

Our economic conditions have changed dramatically in the past years and decades. The UK has shifted from a manufacturing economy to a financialised and service-oriented one. Precarity of work has expanded with the advent of 'platform' employers such as Uber and Deliveroo, with zero hours contracts, shifting definitions of the word 'worker' and the ongoing failure to recognise unpaid socially reproductive work as economically valuable. Automation has been replacing people in jobs for hundreds of years, but this has increased since the information technology boom.

The climate emergency is impacting the economy in many ways, particularly in the jobs market. Increasing numbers of people are moving from fossil fuel or consumption-related jobs to roles in climate mitigation and adaptation. Climate chaos is also acting as a risk multiplier for the most vulnerable people, including in the UK, and expands wealth and health inequalities.

The problem with GDP

Ongoing global political changes have moved the UK's place on the global stage from the largest empire in history to a middle-ranking economic power, with much of that change happening in the past 100 years. Soon after that decline, economist Simon Kuznets developed the concept of gross domestic product (GDP) as a way for national-level decision-makers to understand what was happening under their management,



TOM PASHBY: IEMA DIGITAL JOURNALIST

We need to alter our conception of what constitutes economic success, says **Tom Pashby**

and a measure of the success of their economic policies. In 1934, he warned the US Congress against its use as a measure of general welfare. GDP has been used as a key measure of economic wellbeing in the UK since at least 1955, and by the World Bank since at least 1960.

There are economic indicators other than GDP that are used extensively in the UK and the wider world, such as GDP per capita, employment, unemployment, stocks and shares indices, median wages and taxation receipts. However, these cannot completely accurately describe the wellbeing of the overall economy. GDP rises if you destroy a home and rebuild it with new, non-renewable materials – clearly not a useful activity. Another issue is that in economically unequal countries such as the UK, GDP tends to over-represent the wellbeing of very wealthy individuals, with people in poverty effectively ignored.

The climate and ecological emergency is another example of the failure of these measures. If we simply ignored the climate crisis and engaged in activities

such as aiming for maximum economic output of North Sea oil and gas, GDP and the rest of the traditional measures would indicate improvements to general welfare. They would fail to consider the expansion of extreme weather events, vulnerable communities' decreasing access to insurance products, climate-related deaths and ecological destruction.

An alternative approach

A growing number of alternative economic indicators have appeared in recent years. These include the capability approach, the Human Development Index, the Index of Sustainable Economic Welfare, Gross National Well-being and Gross National Happiness. Indeed, the Gross National Happiness measure, which takes a more holistic approach towards 'progress' and recognises the contribution of unpaid work to overall wellbeing, has been adopted by the government of Bhutan.

IEMA's policy and engagement lead on biodiversity and natural capital, Lesley Wilson, recently submitted written evidence to the House of Commons Environmental Audit Committee (EAC) that echoed some of these concerns about GDP, and proposed that the government create new economic indicators to take natural and social capital into account. The EAC was seeking evidence to support its enquiries into aligning the UK's economic goals with environmental sustainability.

While UK chancellors continue to use reports about GDP growth, stagnation or shrinkage as some of the most important indicators of their policies' successes, we will be left with huge blind spots over our labour markets, household activity, environmental welfare and capacity to adapt to the climate emergency.

"GDP rises if you destroy a home and then rebuild it with new, perhaps non-renewable materials"



CarbonStore™

Has your business thought about planting **home-grown trees** in the UK to sequester your residual carbon emissions?



We can help you every step of the way – from planting the trees to delivering the verified carbon units.



Learn more by giving David McCulloch a call on 01786 649387 send an email: info@carbonstoreuk.com or visit: www.carbonstoreuk.com



CASE LAW

Appeal over oil well site dismissed

In *R. (on the application of Finch) v Surrey County Council*, the appellant appealed against the dismissal of her judicial review claim. She sought review of the council planning authority's decision to grant permission to expand an oil well site and drill four new oil wells.

The authority provided an environmental impact assessment that was confined to direct releases of greenhouse gases (GHGs) from within the site. Its scope did not extend to the use of the crude oil produced.

The judge upheld the permission, rejecting the appellant's submission that anything attributable to a proposed development should be assessed, including potential impacts from the use and exploitation of an 'end-product'.

The first consideration was the legal test for the development's indirect likely significant effect on the environment. The 'proposed development' in the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, and the 'project' in Directive 2014/52/EU on the assessment of the environmental effects of certain public and private projects, are to be considered broadly. In this case, both oil well construction and the use of crude oil extraction for commercial purposes fell within those concepts.

This raised the question of whether a particular impact was a likely significant effect of the development – a matter of fact and evaluative judgment for the authority. The appeal's outcome turned

IN COURT

Water company pays for environmental damage

Yorkshire Water has agreed to pay £300,000 to Yorkshire Wildlife Trust following a sewage discharge incident in Leeds in 2018.

The company had breached its environmental permit with an unauthorised sewage discharge from its Garforth Storm Tanks, which caused pollution at Kippax Beck. Flows at Garforth Storm Tanks are managed by an automated valve that controls and isolates sewage. The tanks fill during times of heavy rainfall. If the valve fully closes, all sewage and rainfall are diverted to the storm tanks and an alarm alerts Yorkshire Water. Sewage levels in the tanks are then monitored using level sensors and alarms.

On 17 November 2018, the Environment Agency alerted Yorkshire Water to discoloured water in Kippax Beck. It was discovered that the valve was fully closed, which meant the storm tanks had filled and were discharging into a nearby watercourse. Neither the valve alarm or storm tank sewage level alarms had triggered, meaning the system had appeared to be operating as normal.

The impact was widespread, affecting the beck and its wildlife for 3.5km.

Yorkshire Water agreed an enforcement undertaking with the Environment Agency, and Yorkshire Wildlife Trust will use the donation to fund a series of projects at

nature reserves in the Lower Aire valley. The offer also sets out the steps taken for improvements, including replacing and repairing machinery and equipment, carrying out a review of alarms, and completing an environmental survey.

It's been a bad start to 2022 for Yorkshire Water, which was also fined £233,000, plus £18,766.06 costs and a £170 victim surcharge, after admitting responsibility for a 2017 sewage leak that led to the deaths of hundreds of fish in Tong Beck near Bradford.

Concerns had been raised following issues with pumps at the Dale Road site, which is automated and unmanned. The water company had upgraded the station and renewed the pumps in 2012 in response, installing what was intended to be a temporary isolation valve on the rising main just outside the boundary.

Since the pumping station is not manned, a telemetry system monitors whether the pumps are working. However, there was no such monitoring of the rising main, so the

system did not notify Yorkshire Water of the valve failure or resulting loss of sewage from the rising main. An estimated 20m litres of sewage were discharged over a four-day period.

Since 2015, the Environment Agency has secured water company court fines of more than £137m.



on the lawfulness of the authority's decision that downstream GHG emissions were not indirect significant effects of the development.

Secondly, the appellant argued that the judge had been wrong to hold that the regulations were not directed at impacts resulting merely from consumption or use of an 'end product'. However, the expression 'end product' was not used by authorities to include anything that might follow from permission being granted and implemented.

The appellant's third argument was that the judge had been wrong to hold that the directive and regulations did not require assessment of 'downstream' GHG emissions. The fact that certain impacts were inevitable might be relevant to the question of whether they were effects of the development, and make it more likely that they were, but did not compel the conclusion. The authority had not exceeded the bounds of reasonable evaluative judgment, so the judge concluded the decision was reasonable and lawful and that the authority had not relied on immaterial considerations or made any error of law, stating: "the necessary causal connection between the proposed development and the impacts of 'scope 3' GHG emissions was absent in this case".

The appeal was dismissed.

NEWREGULATIONS

THE LATEST

■ LEGISLATION ■ GUIDANCE ■ CONSULTATION



LEGISLATION

Climate-related disclosures

Legislation has been published that means certain companies will have to make climate-related financial disclosures in strategic reports or energy and carbon reports from 6 April 2022.

These requirements will increase the quantity and quality of climate-related reporting across the UK business community. They will also provide a uniform way to assess how a changing climate may impact a business model and strategy, as well as helping businesses to harness opportunities from the UK's transition to net zero.

☞ [cedr.ec/86w](#)



LEGISLATION

Workplace parking

The Workplace Parking Licensing (Scotland) Regulations 2022 set out provisions on workplace parking licensing schemes, which can be made under the Transport (Scotland) Act 2019.

The Act gives local authorities the discretionary power to make workplace parking licensing schemes in their area. Where a scheme is in place, a licence will need to be obtained from the local authority for each parking place made available for use by employees and certain visitors to premises covered by the Act.

☞ [cedr.ec/86n](#)



LEGISLATION

Packaging tax

The new Plastics Packaging Tax will come into force on 1 April 2022. The tax aims to incentivise use of recycled material in plastic packaging production; will apply to plastic packaging manufactured in or imported into the UK that contains less than 30% recycled content; will have a rate charged at £200 per tonne; and does not apply to businesses if they manufacture or import less than 10 tonnes of plastic packaging in a 12-month period.

☞ [cedr.ec/86v](#)



GUIDANCE

Drainage and wastewater

The water industry is producing guidance on strategic drainage and wastewater plans to maintain, improve and extend robust and resilient drainage and wastewater systems.

Water and sewerage companies must produce drainage and wastewater management plans, covering a minimum of 25 years and looking at current and future capacity, pressures, and risks to networks such as climate change and population growth. They must set out how companies will manage these pressures and risks through their business plans, and how they will work with other risk management authorities or drainage asset owners.

☞ [cedr.ec/86m](#)



CONSULTATION

Waste crime

The government has announced two consultations on reforming the waste industry to tackle illegal activity such as fly-tipping and illegal waste export.

As part of the reform, those trading or moving waste could face extra background checks. This will ensure waste is only managed by authorised people and make it more difficult for unregistered operators to work in the sector. Changes will make it easier for regulators across the UK to act against operators.

The plans also aim to introduce mandatory digital waste tracking. Those handling waste will record information from when it is produced to the point it is disposed of, recycled or reused, which will allow the regulators to detect illegal waste activities more accurately.

☞ [cedr.ec/86u](#)



CONSULTATION

Bathing waters

The Department of Agriculture, Environment and Rural Affairs has launched a consultation on a review of bathing waters in Northern Ireland. Such a review is required every six years.

The department is aware of increasing interest in open water swimming during the past few years, so this review seeks nominations for new sites where large numbers of people are bathing. It also examines the length of the bathing season.

☞ [cedr.ec/86o](#)

Going full circle

Dame Ellen MacArthur tells Chris Seekings about her work promoting circular economy principles across the global economy, and how her experience as a record-breaking sailor helped prepare her for the task

Dame Ellen MacArthur was thrust into the spotlight when she broke the world record for the fastest circumnavigation of the globe as a sailor in 2005. She had no more than 20 minutes' sleep at a time during the voyage, having to be on constant lookout day and night. "I had with me the absolute minimum of resources in order to be as light, hence as fast, as possible," she explains. "At sea, what you have is all you have. Stopping en route to restock is not an option, and careful resource management can be a matter of life or death – running out of energy to power the autopilot means you can be upside down in seconds."

MacArthur was made a Dame Commander of the Order of the British Empire on her return, and a Knight of the French Legion of Honour three years later. Other awards and honours followed, but her experience granted her a far greater prize: an appreciation of limited resources and sustainability. "My boat was my world – I was constantly aware of its supply limits," she says. "When I stepped back ashore, I began to see that our world was not any different. I had become acutely aware of the true meaning of the word 'finite'."



"My boat was my world – I was constantly aware of its supply limits. When I stepped back ashore, I began to see that our world was not any different"



A new chapter

In October 2009, MacArthur announced she would retire from competitive racing to concentrate on resource and energy use in the global economy, launching the Ellen MacArthur Foundation in 2010. "In our current linear economy, materials flow one way – we take resources from the ground, make products, and then they are discarded and either burned or end up as landfill or as pollution in the environment," she says. "I spent the next four years meeting with experts across a variety of countries, economies and industries to better understand our global approach to the way the economy uses resources. I realised there were some big challenges ahead."

Her foundation promotes the circular economy – a production and consumption model that ensures materials and products last as long as possible via sharing, leasing, reusing, repairing, refurbishing and recycling. Working with businesses, policymakers and academics, her team is at the forefront of circular economy research, developing solutions for plastics, food, fashion, finance and cities.

"Tackling some of our biggest global challenges, such as climate change and biodiversity loss, needs a systemic shift in the way we produce and use products

and food, across sectors and industries at a large scale," she says. "The foundation's priorities lie in mobilising solutions by working with our network of private and public sector decision-makers, as well as academia, to build capacity, explore collaborative opportunities, and design and develop circular economy initiatives and solutions."

System change

Changing the way we mass produce goods is a daunting task. Looking at the food system, for example, MacArthur highlights that while it has sustained a growing population and brought economic development, it is also the main driver of biodiversity loss, and accounts for a third of human-induced greenhouse gas emissions. "One of the challenges is creating change while locked in this linear system where we extract finite materials, make and use products and ultimately create waste," she says. "However, due to the opportunities in shifting to a circular economy that eliminates waste and pollution, circulates materials and regenerates nature, there are more and more examples of the circular economy in action."

Guima Café, which produces coffee in Brazil, is an example of a company in the food system that is working to



implement circular economy principles, collaborating with Nestlé/Nespresso and ReNature to transition to what MacArthur calls "regenerative agriculture". "They're extending the ingredients they grow, building the health of their soils, providing greater diversity of ingredients from the same land and greater habitat provision for biodiversity," she says. "New collaborative partnerships will ensure all the farm outputs are bought, including coffee, avocados, honey and rubber."

PepsiCo, meanwhile, is partnering with CCm Technologies to turn potato peel from crisp factories into fertiliser, while the Nutrient Upcycling Alliance is working to turn inedible food waste into organo-mineral and organic fertilisers. General Mills is another leader in this area, having set an ambitious goal to shift one million acres of agricultural land to regenerative production by 2030, running pilots with farmers and providing coaching and technical assistance during the transition.

Food for thought

Collaboration lies at the heart of the circular economy, and the transition will require all stakeholders across systems to play their part. "Solutions to systemic challenges will not be found in siloed actions," MacArthur explains. "In the food system, for example, businesses need to rethink how food products are made by applying a total mindset shift where, instead of bending nature to produce food, food is produced for nature to thrive."

Although her foundation has done a huge amount of work to promote the circular economy across various sectors – particularly highlighting the wastefulness of fast fashion and the environmental damage of single-use plastic – the global food

"We need a systemic shift in the way we produce and use products and food"

system has become an increasing area of focus. Last year, it launched its 'Big Food Redesign' to promote a "nature-positive food system". "Food brands and retailers can play a huge role in creating this shift, as the top 10 brands and retailers alone influence about 40% of agricultural land in the EU and UK," MacArthur says. "By applying the principles of the circular economy to the way brands and retailers design their food products – which includes the concept, ingredient selection and sourcing decisions, and packaging solutions – these businesses can go beyond simply sourcing ingredients that have been grown in better ways, to also include a greater diversity of ingredients, lower-impact ingredients, and ingredients that have been upcycled from what might be treated as waste today."

The initiative encourages businesses to take five actions: creating ambitious and well-resourced action plans; creating a more collaborative dynamic with

farmers; developing iconic products to showcase what is possible; contributing to and using common metrics and definitions; and advocating for policies that support a nature-positive food system. "Businesses can also play their part in marketing these new offerings, raising public awareness and providing better choices," MacArthur continues.

Growing momentum

Although the circular economy is not as widely-understood as climate change and biodiversity loss, the issues are inextricably

linked, and MacArthur says awareness is "gaining momentum". It is in the long-term interests of businesses to apply the key principles, and a growing number are doing so, spurred by the events of the last two years. "The early stages of the COVID-19 crisis revealed the vulnerability of many global supply chains, but prior to the pandemic, the need for a system reset was already becoming clear," she explains. "Forty-five per cent of greenhouse gas emissions and 90% of biodiversity loss come from the way we make and use things, including food. By applying the principles of the circular economy to build back better, we can eliminate waste and pollution, circulate products and materials, and regenerate nature from the outset by redesigning everything. The pandemic has forced us to adapt our daily lives and has also required us to rethink many of the systems we rely on."

The European Commission adopted a new circular economy action plan in March 2020, which is one of the main building blocks of its European Green Deal, while the UK has launched a Circular Economy Package, which identifies steps to reduce waste and establish a long-term path for waste management and recycling.

Although it currently seems unlikely that a zero-waste society is feasible, MacArthur believes the principles of a circular economy can get us as close as possible, while providing the tools to tackle the causes of most environmental challenges. "We need businesses and governments to work together to create the system that allows us all to make better choices – choices that are part of the solution to global challenges, rather than part of the problems," she says. "No one can say how long this transformation will take, but what we can say is that it is already under way – and it is accelerating." 

A job well done?

The Scottish government has made much of its moves to support green jobs, but what is actually happening on the ground?

Catherine Early reports



The Green Jobs Barometer developed last year by PwC reveals Scotland's conundrum. It is the joint top-performing UK region for the creation of green jobs, but also the region where the largest relative impact of job loss will be felt.

The Scottish government has kickstarted discussions about green employment options and the just transition. Since 2019, the Scottish Just Transition Commission has engaged with people in sectors likely to be affected by the low-carbon transition, and advised the government. A £100m fund has been set up to support green job creation, and in December 2020 the Scottish government launched the Climate Emergency Skills Action Plan (bit.ly/Scot_CESAP) to co-ordinate action and a Green Jobs Skills Hub to identify the numbers and types of jobs that will be needed in the next 25 years.

Upskilling and reskilling

A year on from the plan's launch, the government and national skills body Skills Development Scotland (SDS) claim to have started training the next generation of renewable

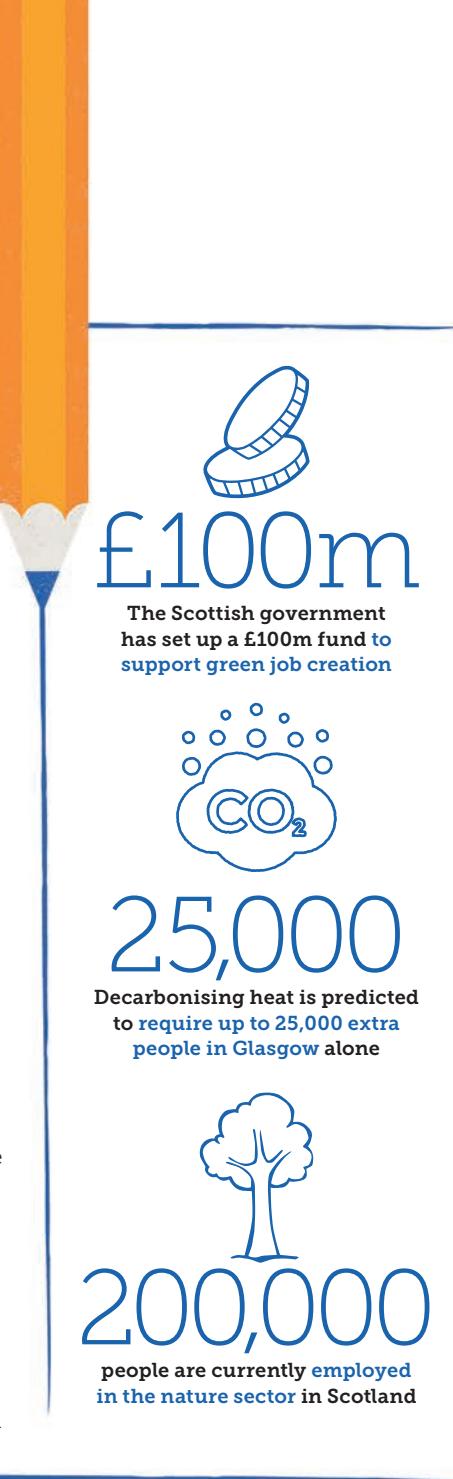
Skills

professionals, putting climate change resources into schools and working on apprenticeships. A Green Jobs Workforce Academy has been launched to help existing employees and those facing redundancy to upskill and reskill so they are ready for green job opportunities, and to provide bespoke climate emergency training and the development of a net-zero toolkit to support small engineering firms.

One area of focus is apprenticeships. SDS is working with the Scottish Apprenticeship Advisory Board to work out how sustainability can become a component of all apprenticeships, recognising that the net-zero transition will impact all sectors of the economy.

Standards for apprenticeships are being refreshed to reflect upcoming technologies, rather than current ones. "We need to ensure the skills given to young people are relevant to the future," says Chris Brodie, director of regional skills planning and sector development at SDS. He cites the construction trade as one where qualification development has not been sufficiently forward-looking. "When these qualifications were developed, two or five years ago, they were focused on the technologies of the noughties rather than the technologies of the 2020s and 2030s," he says.

SDS also has a programme looking at the skills involved in decarbonising heat, predicted to require up to 25,000 extra people in Glasgow alone. SDS is working with regional economic partnerships and housing associations to identify when demand is likely to come forward, what skills will be needed, and how



"White-collar jobs are not going to fill the gap left by the loss of jobs in oil and gas, thermal generation and nuclear"

people can access training. Similar work is being done in Scotland's highlands and islands, looking at what rural areas need.

"Planning needs to be rooted in real-life problems and investment opportunities, and you need to approach it in an achievable and scalable way," Brodie says. Lessons from the work in Glasgow will be fed into the whole skills system in Scotland via the Energy Skills Partnership, a collaboration of colleges and industry formed to boost skills for the renewable energy sector.

One of the challenges is uncertainty over exactly which technologies will be deployed in decarbonising certain sectors, Brodie says. SDS has skills leads for each major sector, including finance, energy, transport and manufacturing, who spend time talking to employers about what they are planning.

Scotland's relatively small working-age population is an issue. It has been reliant on migrant labour, but supply diminished post-Brexit and COVID-19. "One of the fallacies about skills policy is that the problem will be solved by training people – we also need a strategy for getting people back into work," says Brodie.

Nature sector jobs

Another area of focus is the nature sector. The potential here is underestimated, says Claudia Rowse, deputy director of sustainable growth at NatureScot.

"Conferences on green jobs are mainly about the transition out of oil and gas, and jobs in renewable energy," she says. "Those are hugely significant for Scotland, but partners and stakeholders have been surprised to hear that 200,000 people are currently employed in the nature sector – equivalent to the number in oil and gas. It's grown at five times the rate of other sectors over the past five years and we're anticipating significant growth in the decades ahead."

NatureScot is predicting that there will be around 7,000 new nature sector jobs, in areas such as peatland restoration, green infrastructure, woodland creation and restoration, and blue carbon, by 2030 – particularly given the role of nature-based solutions in Scotland's climate

change plan update. An action plan for the sector was launched in August 2021.

NatureScot is working to identify where and when those jobs will be needed, and at which level, according to Rouse. It is also planning an awareness-raising campaign to help the public understand what a nature-based job is. Working with the Council for Ethnic Minority and Voluntary Organisations, it has taken on four graduates from minority ethnic backgrounds, whom it hopes will act as ambassadors for the nature-based sector within their communities.

"Nature-based jobs are not just digging holes or planting trees – there's a varied range, including highly qualified jobs such as engineers, hydraulics and the use of new technologies such as remote sensing, as well as generic jobs around administration, project management and social behaviour," she says.

Market reliance

The Scottish government's green jobs agenda needs to go a lot further to make a real difference, according to Richard Hardy, Scottish national secretary for the trade union Prospect. Though the Scottish government has gone further than its UK counterparts in discussing the issue, it still relies too much on the market to provide jobs, he says, with most jobs created so far being professional level ones in the renewable energy sector.

"That sort of white-collar managerial job is not going to fill the gap left by the loss of jobs in offshore oil and gas, thermal generation and nuclear. The approach seems to be driven by the view that if we invest in the university sector and produce world-beating research and solutions, it will automatically generate supply chain and manufacturing jobs in Scotland," he says.

Hardy, a commissioner on the Just Transition Commission, believes the government needs to be more interventionist – or foreign-owned businesses will buy the intellectual property from universities and set up manufacturing and supply chain work in Denmark or China. "We'll be concreting other people's work into the seabed and

shipping it from the other side of the world in order to do that," he says.

The Scottish government must create and enforce local content rules that bring about tangible job creation, rather than just asking for a percentage of the total value of the contract to benefit Scotland, he says, adding that companies have got around these rules via clever accounting.

In January 2020, the then Scottish Economy Secretary Derek Mackay acknowledged that renewable energy was not delivering sufficient benefits to the local supply chain. The only wind farm equipment manufacturer based in the UK, CS Wind, closed its Campbeltown factory in September 2021, while Scottish steel manufacturing firm Burntisland Fabrications went into administration in 2020 – though it was bought last year by London-based firm InfraStrata, which wants it to win offshore wind contracts.

In January, the Scottish government announced the first ScotWind leasing round, which will see 25GW of offshore wind built around the coast. All developers must submit a Supply Chain Development Statement outlining how they will deliver benefits to Scotland. Developers have committed to invest at least £1bn in the Scottish supply chain for every GW of energy generated via projects, according to the government.

Hardy warns that the government will lose support for the low-carbon transition if quality manufacturing jobs are not created to replace high-carbon industries. "People will fight to stay in dirty energy and think the just transition talk is just a sop. They'll think, 'I'm not being protected, so sod saving the planet!'" 

CATHERINE EARLY
is a freelance journalist.



SSE – A STRATEGY FOR THE JUST TRANSITION

Energy company SSE published a Just Transition strategy in November 2020, setting out the principles it plans to follow to help protect workers and communities as the UK moves towards net zero. These included attracting people from high-carbon industries to low-carbon roles, and supporting greater diversity in the workforce.

The company is leading the development of Scotland's largest offshore windfarm, off the coast of Angus, and one of Europe's most productive onshore windfarms on the Shetland Islands. These alone are creating more than 1,000 skilled green jobs, it says.

A survey found that at least 1,500 of its employees who now work on low-carbon projects had previously worked in high-carbon roles. At the Beatrice offshore wind farm off the Caithness coast, as many as two

thirds of the control room staff are former oil and gas workers.

An update to SSE's plan revealed actions it was planning to take, including piloting an engineering conversion programme for new talent who transition to SSE from other sectors. The firm pays for any skills training that employees need to move roles. It also pledged to report against the strategy in its annual report.

One of the biggest challenges is planning for the transition, says SSE head of social impact Kate Wallace-Lockhart. "We're currently trying to work out how many jobs can be created, as skills can move very quickly," she says. "The level of capacity in the ScotWind announcement is higher than anyone thought it would be. You can try and plan as much as possible, but the further into the future you look, the harder it is to get it right."

We can tackle chronic social and environmental disconnection by putting relationships at the heart of teaching, says **Rachel Musson**



Regenerating relationships

Regenerating education should be a process of allowing and enabling all of its aspects to be restored and rebalanced to a healthier state. It's a bit like gardening: cultivating conditions for healthy growth – except in this case, it's done by nurturing our relationships.

Through my own experience working with education systems across the global north and south, I've connected with thousands of children, educators and practices, all working to regenerate healthy learning environments for people and planet. The one thing they have in common? They put relationships at the heart of teaching and learning.

When it comes to education, it is no longer sustainable to focus on fixing a broken system. As we face the global challenges of mental health, social inequality and the climate emergency, education needs to give young people the knowledge, skills and practices they need to create and sustain a thriving world. We need to offer frameworks that connect teaching and learning with

personal, community and planetary wellbeing – what ThoughtBox calls 'Triple Wellbeing'. This framework is built around a simple design of allowing and enabling healthy relationship dynamics through self care, people care and earth care.

"We need frameworks that connect teaching and learning with personal, community and planetary wellbeing"

Now is the time for regeneration – for being more creative, more purposeful, more compassionate, and more in tune with life

within us and around us. It is time to become more human and say 'yes' to our innate capacity to flourish. 

RACHEL MUSSON is the founding director of ThoughtBox, a social enterprise that aims to put wellbeing at the heart of learning.

Class reunion

We are living in the most connected time in human history. People can fly to distant lands, video call each other at any time of the day or night, shop for whatever they desire at the touch of a button, and orchestrate almost anything from a small device in the palm of their hand. We have extraordinary interconnectivity – yet we suffer from chronic disconnection.

We can see the symptoms of this across the globe. Mental health issues are on the rise as we become disconnected from our emotional needs. Social divides permeate our systems through poor social equality and lack of connection. The climate crisis is affecting all living systems because of poor planetary care, caused by our fundamental disconnection from the natural world. Parts of society have slowly fragmented into bits and pieces, and separated us in the process. And the same can be said for our education systems.

A growing disconnect

As my teaching career progressed, I felt unease about the fact that education was no longer preparing young people for the world; in some cases, it was doing more harm than good. Education policies mean that schools have to focus more on measurable, tangible results than on nurturing emotional wellbeing.

For many, school has become more about competition and stress than about nurturing young people so that they are ready to step into the world and flourish.

On a basic level, schools are separating us from our innately human ways of connecting with the world. We are whole beings who think, feel and connect with all of our body and our senses. As natural empathics, we're born with a deep and innate connection with each other and the rest of the natural world – yet our compartmentalised, sedentary and primarily indoor education ignores our humanity in favour of a factory-line model that functions through competition, compliance and separation.

This is not teachers' or stakeholders' fault: it is the fault of the system. Our mainstream education system is no longer fit for purpose, and we are seeing a widening disconnect between it and what is needed to give students the resilience and resourcefulness they require to thrive.

We need education that can put us back together again: that can nourish ourselves, our relationships with others and our relationship with the natural world. We need regeneration.

A fair warning

Society needs to have a more honest discussion about intergenerational fairness and the burdens being placed on the young, says **Angus Hanton**

An intergenerationally fair society balances the interests of different generations, both today and for the future. Future governments should not be hamstrung by the need to cover today's spending decisions. When spending is ramped up, such as during the COVID-19 pandemic, it becomes more urgent to reach agreement on how to ensure intergenerational fairness and financial sustainability going forward.

The pre-COVID-19 situation
 Even before COVID-19, younger generations were losing out when it came to government spending and benefit decisions. Intergenerational Foundation research has revealed that, during the 19 years to 2019, the gap between the amount the government spent on older people and the amount spent on younger generations doubled (bit.ly/IF_AgeBias). Pensioner poverty halved to around 1.9 million pensioners, or 15%, while the number of children living in poverty reached around 4.2 million, or 30%. According to former Children's Commissioner Anne Longfield, we are on track to having the highest levels of child poverty since records began in the 1980s.

During the past decade, the position of younger generations stagnated or declined in most policy areas, while the wealth gap between the oldest and youngest age groups grew by more than 40% in the past six years alone (bit.ly/IF_LeftBehind). At the same time, the government has been spending £20bn every year on interest for public sector pension debt, and this figure is set to soar as the debt burden and interest rates rise.

Contributing more

Much of the change in spending – which has involved withholding large parts of the welfare safety net, such as travel concessions and housing benefit, from younger generations – is due to the rapid ageing of society. State pension spending rose from around £40bn in 2010 to around £100bn in 2020 due to increased numbers of pensioners and government promises to maintain the state pension 'triple lock', which raises state pension's value every new tax year by inflation, average wage growth or 2.5% – whichever is highest.

It is clear that older generations did not contribute enough in taxes and National Insurance during their working lives to cover the cost of their growing longevity. Furthermore, while people are living longer, they are often doing so with chronic conditions, thus increasing spending on health and social care. And at the same time, older generations are the wealthiest ever, having enjoyed the last final salary pensions and the unprecedented rise in property values.

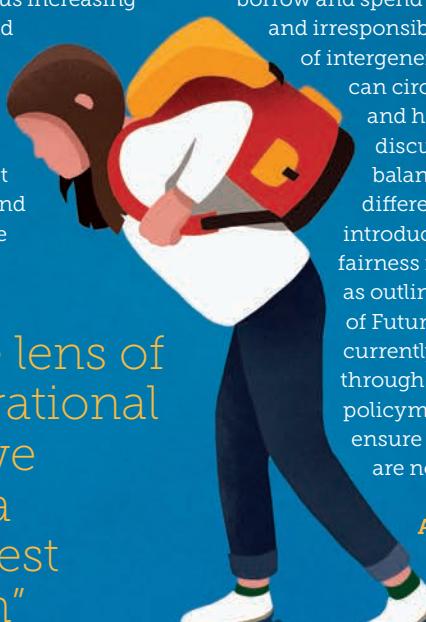
"Using the lens of intergenerational fairness, we can have a more honest discussion"

The Intergenerational Foundation argues that, on both intergenerational fairness and intergenerational financial sustainability grounds, older generations should contribute more to cover the costs of their increasing longevity, rather than already overburdened younger generations. Unfortunately, recent governments have preferred to impose new tax burdens onto young people (bit.ly/IF_PackhorseGen).

COVID-19's contribution

The UK has so far borrowed close to half a trillion pounds, on top of day-to-day spending, to combat COVID-19 – equal to around four years of NHS funding, or about £10,000 for each UK household. The UK's national debt was an eye-watering £2.2trn, running at 104% of GDP, by the end of March 2021 according to the Office for Budget Responsibility, and that does not account for spending through to 2022. The cost of this will be passed onto younger and future generations, worsening intergenerational fairness today and intergenerational financial sustainability in the future.

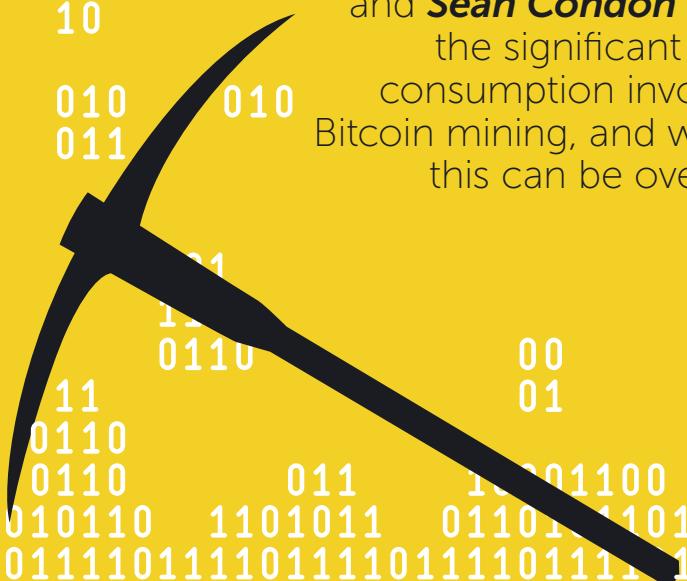
Impact assessments

Calls to turn off spending are interpreted as 'right wing' and neoliberal, calls to borrow and spend more as 'left wing' and irresponsible. Using the lens of intergenerational fairness, we can circumvent party politics and have a more honest discussion about how to balance the interests of different generations. By introducing intergenerational fairness impact assessments as outlined in the Wellbeing of Future Generations Bill, currently making its way through Parliament, today's policymakers could help to ensure that future generations are not overburdened. 

ANGUS HANTON is co-founder of the Intergenerational Foundation.

Mining disaster?

Jamie Gleave, Mary Maguire and **Sean Condon** discuss the significant energy consumption involved in Bitcoin mining, and whether this can be overcome



11110111101110111011110111
011000110001100110001100011
101101011010110011010110101
111101111011110
011 100 100
1011
111
110

Since its 2008 inception as a decentralised electronic cash system, Bitcoin has become the world's ninth most valuable asset by market capitalisation. It has fuelled a multi-billion-pound industry based on a payment system that is decoupled from governments, banks and third-party financial institutions, and its recent acceptance as legal tender in El Salvador gives an insight into how cryptocurrencies might feature in future global finance.

Despite the growing adoption of cryptocurrency as an alternative financial service, criticism has been levelled at Bitcoin's environmental impacts – particularly its energy consumption, which is frequently compared to that of entire countries. The environmental inefficiencies of Bitcoin and the blockchain technology underpinning it (see '*What is Bitcoin?*', right) have come under scrutiny, with critics challenging the electricity consumption associated with processing financial transactions and mining Bitcoins (see '*What is Bitcoin mining?*', overleaf).

Maintaining an edge

Incentivising the completion of mathematical problems to mint new Bitcoins has created an arms race between miners. As the rewards become more financially attractive, more people are drawn in. Greater mining activity increases the problem-solving difficulty, pulling greater investment into more powerful energy-consuming miners to solve the puzzles. This creates a vicious cycle in which people have to operate the most powerful hardware to maintain a competitive edge. Gone are the days of verifying transactions using home computers. Dedicated mining rigs, running 24/7 in purpose-built data centres, are considered essential to remain profitable.

Although some data centres have been constructed with sustainability in mind, they still require electricity to power and cool their hardware. This has resulted in Bitcoin mining efforts being located in places with cheap, stable electricity sources – which are not necessarily environmentally friendly.

A return to fossil fuels

Against a backdrop of decarbonisation and the growing obsolescence of fossil fuels, countries that still rely on cheap and stable fossil sources are attractive to miners.

0111101111011110111101111011110111101111011110111101111
0011000110001100011
0101101011010110 Energy

Energy

WHAT IS BITCOIN?

Bitcoin is a cryptocurrency that allows payments to be sent digitally between parties without going through institutions such as banks and payment providers. Bitcoins are created, distributed, traded and stored on a public ledger known as the blockchain, which logs all transactions taking place as 'blocks'. Network transactions are secured by cryptographic algorithms within software, rendering it virtually impossible to double-spend or counterfeit Bitcoins.

The recent cryptocurrency crackdown in China, which declared all such transactions illegal, took a significant number of coal-powered miners offline. Much of this mining equipment was redeployed in Kazakhstan, which has a surplus of fossil fuel-generated electricity – but Bitcoin's enormous energy consumption has since been linked to blackouts in the country.

The demand for cheap energy to mine cryptocurrency is now so great that, in 2021, a mothballed coal power station in Dresden, New York, was brought back into use through a natural gas conversion to power more than 15,000 miners. The plant has been challenged by people worried about damage to aquatic biodiversity, caused by the vast amount of water being drawn from an adjacent lake for cooling. Bigger concerns, however, surround the environmental acceptability of miners being powered by a privately owned fossil fuel energy production facility, potentially paving the way for other idle plants to be revived.

The nomadic nature of Bitcoin mining, absence of official data and differing statistics makes activities and energy sources hard to track. In 2020, the *3rd Global Cryptoasset Benchmarking Study* (bit.ly/CryptoBench_3), estimated that just 29% of global Bitcoin mining is powered by renewable energy.

Electronic waste

Bitcoin's environmental impacts go beyond energy consumption: the hardware supply chain and quantity of electronic waste (e-waste) arising from the disposal of inefficient technology is also becoming a problem. Equipment and technology manufactured solely for mining has limited after-market and repurposing opportunities, with studies claiming that redundancy can occur within 18 months of manufacture. This obsolescence is a key generator of Bitcoin e-waste. As of mid-February 2022, Bitcoin's e-waste footprint has been calculated to total 32.80kt annually – a number comparable to the Netherlands' total small IT waste. With most miners being located in countries that have poor regulatory waste disposal frameworks, total recycled Bitcoin e-waste arisings are likely to be less than the global recycling average of 20%.



MCEES: INTEGRATED

1011
1111011110111101111101111101111101111
01100011000110001100011000110001100011
10110101101011010110101101011010110101

Energy

WHAT IS BITCOIN MINING?

Bitcoin mining is the process by which computers (miners) work to verify transactions and add them as 'blocks' to the blockchain. Miners compete to solve a complex mathematical problem, with the first miner to solve the puzzle being rewarded in Bitcoins. Some 18.9m Bitcoins have been minted from the capped 21m supply. As the number of Bitcoins mined per block is programmed to halve approximately every four years, the final Bitcoin will be released in 2140.

Recognition of carbon emissions in Bitcoin mining is gaining traction, with some companies now placing greater focus on environmental, social and governance matters, and more discussion of sustainability in general. This can be seen in Iceland and Norway, where miners are taking advantage of the cold climate and cheap low-carbon hydroelectric and geothermal energy to power and cool their rigs. More energy-efficient mining hardware and immersion cooling technologies are also coming into play.

A stubborn problem

However, it remains difficult to defend Bitcoin's current sustainability credentials, particularly when the largest commercial operations in the US, Canada and Russia

Mitigating factors?

Is it fair to condemn Bitcoin as an environmentally disastrous invention? Its advocates point out the potential of Bitcoin and blockchain to deliver significant environmental, social and economic benefits. Bitcoin's existence could give the roughly two billion people who lack bank accounts access to a form of banking with low transaction fees and no intermediaries. In addition, employment opportunities are created where data centres are built. Wider application of blockchain in supply chain management for industries such as agriculture may ensure that information about a product's origin, manufacture and delivery is visible and traceable. Other applications could include patient healthcare data storage, waste transfer system management, and ensuring incorruptibility of electoral voting.

"Bitcoin's wider adoption as a form of payment or commodity will dictate how its environmental effects are managed"

are still predominantly powered by 'dirty' energy. The hardware redundancy problem also means the e-waste issue remains, regardless of how miners are powered. One possible resolution is transitioning Bitcoin to a 'proof-of-stake' protocol, whereby intensive mining computations are replaced with a more energy efficient transaction validation system based on the number of Bitcoins an owner holds.

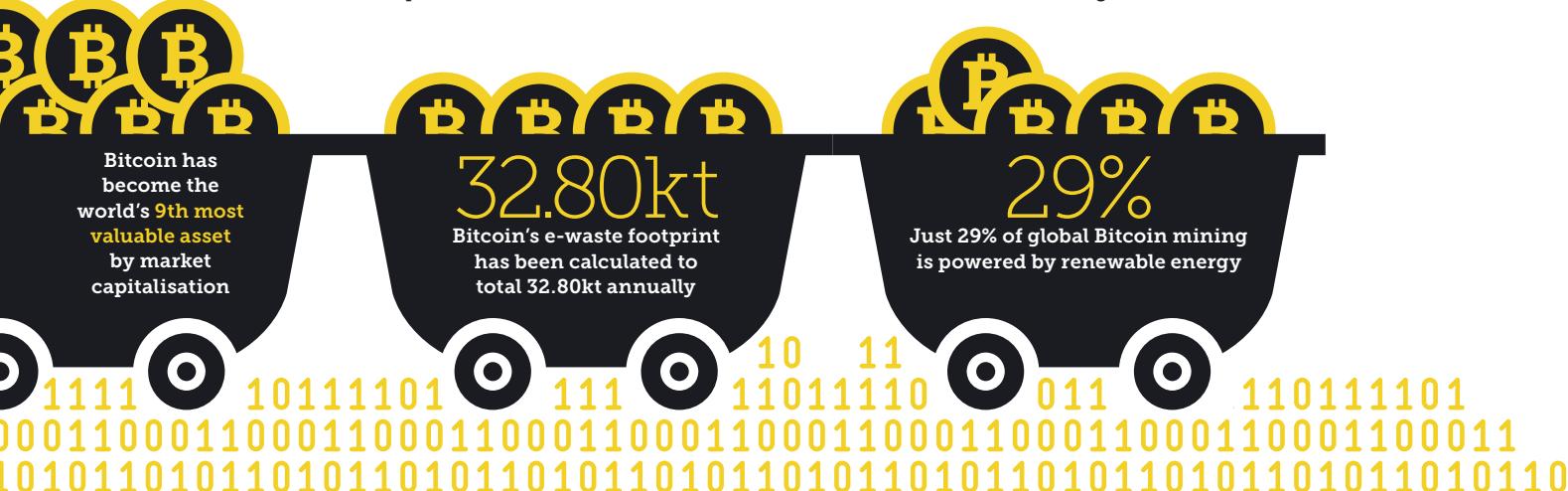
Ultimately, given Bitcoin's fluidity and mobility, it is difficult to predict the outlook. The cryptocurrency's wider adoption as a form of payment or commodity will dictate how its environmental effects are managed. As long as the incentive of rewarding miners for their mathematical work exists, Bitcoin's core economic principles will likely dominate over its environmental and social considerations.

Tyler Winklevoss, a major Bitcoin holder, perhaps summed up the position best when he tweeted: "Computers and smartphones have much larger carbon footprints than typewriters and telegraphs. Sometimes a technology is so revolutionary and important for humanity that society accepts the tradeoffs. #Bitcoin is such a technology". ¹

JAMIE GLEAVE is an associate director at AECOM.

MARY MAGUIRE is a principal consultant at AECOM.

SEAN CONDON is a graduate consultant at AECOM.



LONG SHOTS

In the wake of a damning report on companies' environmental commitments, **David Burrows** looks at whether such industry targets are helping or hindering matters

Coca-Cola has just pledged to make 25% of its packaging reusable or refillable by 2030 – an “industry-leading” target, it says. Campaigners appear supportive, and yet words of encouragement have in some cases been outweighed by caution and criticism.

Break Free From Plastic, a movement that has ranked the drinks manufacturer the ‘world’s worst plastic polluter’ for four years in a row, hoped others would “follow Coke’s leadership” but highlighted the “string of broken promises” the company has made in recent years. There was the target to include 10% recycled

content in every plastic bottle sold in the US by 2005 (missed) and another to achieve 25% recycled content by 2015 (also missed). At the last count, in 2021, Coca-Cola had managed 11.5% recycled content, against a target of 25% by 2025.

Coca-Cola isn’t alone. Several of the largest fast-moving consumer goods companies didn’t achieve ‘zero deforestation’ by 2020, for example, as they pledged a decade earlier. In February, the NewClimate Institute and Carbon Market Watch’s *Corporate Climate Responsibility Monitor 2022*

report (bit.ly/CCRM_2022) accused 25 leading companies of greenwashing in their net-zero commitments: it states that most failed to put forward ambitious targets, and red-flagged the “accounting tricks” that some firms were using.

It’s not just the private sector that has had target trouble, either. The UK government is continually being hauled over the coals for breaching levels of air pollution. Tree planting targets are a perennial problem, as are those on water quality and waste management. Many departments, including Defra,

have missed targets set under the Greening Government Commitments.

This chequered past doesn't bode well as we enter a decisive decade for the planet. Can we trust companies and the government to deliver on the flood of new environment targets being set?

Crowd pleasers

"People are underestimating how hard some of this is," says Mike Barry, former director of sustainable business at Marks and Spencer. "This is a multi-decade systemic shift in how we operate the economy, how we operate society and how we consume stuff – all played out against a backdrop of short-term issues."

And the new environment targets keep coming. Whether it is Coca-Cola's plan to (potentially) rip up its disposable plastic-based business model or the UK government's legally binding target to reach net zero by 2050, we have seen an explosion of target-setting in recent times. This is encouraging and concerning in equal measure.

Barry, now an independent consultant, feels the past 10 years have been "dominated" by PR, with companies trying to outdo one another in ambition. This has some merit, creating interest in an issue that can snowball into industry-wide targets and market shifts (were Coca-Cola's failures of its own doing or because it was left high and dry by competitors that clung to their single-use models?). The zero-deforestation promise made by members of the Consumer Goods Forum, for example, sent a signal to the supply chain, says Barry: "US\$3trn of the marketplace said we've got a target to shift to sustainable palm oil."

At COP26, more than 100 leaders promised to end and reverse deforestation by 2030. Signing the declaration is arguably the easy part, though. As professor Chris Hilson from the University of Reading put it in his paper 'Hitting the target? Analysing the use of climate targets in law' for the *Journal of Environmental Law*, targets "can be set by politicians as a crowd-pleasing token,

without too much thought or intention on follow-through". Is this where we are?

"We often see organisations setting some pretty lofty targets around reducing their environmental impact, getting to net zero or even confirming they've already reached net zero, which in the cold light of day is quite difficult to believe," says Charlotte Pumford, head of regenerative impact at footwear brand Vivobarefoot.

What net zero has done is "capture the imagination, because it finally feels like a clear destination," says Simon Heppner from the Net Zero Now initiative. However, "there needs to be a distinction between global targets that are based on planetary limits and scientific consensus, how these are then interpreted and applied at national level by governments, and finally how they are adopted and implemented by businesses".

An impossible task?

While the consequences of missing global goals are disastrous, the consequences of a small or medium-sized business missing a net-zero target are far less so. Scrutiny of the targets should therefore place them in context. "Every business that has made a net-zero commitment is part of an unprecedented global experiment without clear roadmaps or guidelines to follow," Maria Mendiluce, CEO at the We Mean Business Coalition, noted on LinkedIn following the NewClimate Institute's report.

The report assessed the 25 companies against four areas of action: tracking and disclosure of emissions; setting emission reduction targets; reducing emissions; and climate contributions and offsetting. Only the shipping company Maersk, had "reasonable integrity" overall. Unilever and Nestlé, which have produced more detailed plans than most, were in the bottom five.

Sybrig Smit, one of the report's authors, sympathised with companies, noting the "inconsistent advice" issued by consultants and standard-setting

initiatives. There was mention of the "loopholes" in the process used by the Science-Based Targets Initiative, which has generally been seen as the gold standard for climate commitments but was accused in the report of being a "platform for greenwashing".

Matthew Germain, head of environment at law firm Osborne Clark, feels that setting targets, working towards them and delivering against them is "becoming an almost impossible task". He wonders if there needs to be a "little bit of easing off" to let businesses put the processes in place, hire the right people and establish necessary governance systems. "Hold them accountable for not setting ambitious enough targets, rather than delivery of them," he adds.

Liz Wood, sustainability project leader at compliance scheme and consultancy Comply Direct, thinks people would rather see ambitious targets that



companies fail to meet than "greenwashy, loose or weak targets that we know they can easily achieve".

The firms assessed by the NewClimate Institute and Carbon Market Watch report have committed to emission reductions of just 40% – far below the 90% minimum now thought essential to keep temperature rises below 1.5°C. Some were also selecting years when emissions were "extraordinarily high" as their baselines for reductions, the report's authors noted.

Whether this was intentional or the result of ignorance is hard to tell, but everyone is on a steep learning curve. The pressure to garner positive press remains, which prompts Wood to wonder if there should be more of a role for marketing specialists with environmental expertise – people who aren't going to spin targets, but help organisations develop their green ambitions in a way that's transparent.

Regulators are, of course, promising to clamp down on greenwashing. The new Green Claims Code, developed by the Competition and Markets Authority, talks of "specific and measurable targets and deadlines" to back up claims; net-zero or carbon neutrality targets must also include "accurate information" on the balance between emissions reductions and use of offsetting. None of this is easy, though.

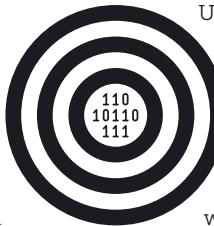
Data and leadership

Data is a point that several experts mention. Consider, for instance, the struggles involved in sifting through supply chains to determine the extent of scope 3 greenhouse gas emissions. Technology is helping in this arena, and the ability to use artificial intelligence and big data to track targets down to the individual product level will define the next decade, says Barry.

With more data comes more detail. Perhaps this plays to Germain's argument – that companies need time to filter all of this. NGOs and investors have begun to police some of the commitments already, and the more holes they find in the targets, the more pressure there will be for the government to intervene.

The government also has a leadership role in setting and meeting targets. Who polices the politicians, though? The Office of Environmental Protection has doubters, but will have the responsibility of ensuring the government is meeting the targets set out in its 25-year Environment Plan.

"Targets can be set by politicians as a crowd-pleasing token, without much thought on follow-through"



Under the Environment Act, the government has until November to lay new long-term environmental targets before Parliament, covering air quality, water, biodiversity, resource efficiency and waste reduction.

This will be tough, but there will likely be as much scrutiny on interim targets, which are fast-becoming a tell-tale sign of robust, well-thought targets. They help "avoid slippage and backloading by politicians", wrote Hilson in his article. This applies to the private sector, too.

Facing up to complexity

"It seems to me that we are entering a period where you can never win, as a corporate with targets," says Germain. Susan Thomas, senior director for sustainability at Asda, says it's easy to be overwhelmed by the number of different organisations trying to encourage businesses to sign up to different targets that can be measured in different ways.

"All this is made immeasurably harder by the fact that there still aren't clearly aligned positions on how we should prioritise, or the inter-relatedness of the issues. Do you want me to reduce the plastic, even if it drives up the waste and potentially the emissions? It's a minefield," she adds.

Companies could find themselves on the horns of tricky environmental, social and governance dilemmas in the months to come as the realities of their net-zero targets become clear and they are pushed to make commitments not just on climate, but also on packaging, pollution, biodiversity, chemicals and water.

Support is building for a new UN treaty on plastic pollution, including binding targets for reducing plastic production and waste. "Sometimes the mistake the environmental movement makes is its belief that if everyone signs up to one target, one press release, we'll go from being unsustainable to sustainable," says Barry. If only it were that simple. ↗

DAVID BURROWS is a freelance writer and researcher.

Keeping promises

Dr Barbara Buchner, global managing director of Climate Policy Initiative, tells Chris Seekings about the urgent need to raise climate finance for developing nations, and how far we are from the US\$100bn goal

At the COP15 climate summit in Copenhagen in 2009, rich countries agreed to provide US\$100bn in climate finance to poorer nations each year by 2020 to help them deal with the loss and damage caused by climate change. That promise was broken, and no concrete action was agreed at last year's COP26 to deliver on the goal, despite extreme weather having become increasingly frequent and destructive across the developing world during the past decade.

As global managing director of Climate Policy Initiative (CPI), Dr Barbara Buchner advises governments and financial institutions on solutions that resolve barriers to investment, including through the Global Innovation Lab for Climate Finance, which has helped mobilise US\$3.2bn of climate finance for developing countries in the past eight years. Her work also involves tracking total climate finance worldwide, making her an authoritative voice on the steps needed to scale up investment and reach the US\$100bn goal.

The International Council for Science has named Buchner one of the 20 most influential women working to tackle climate change, and Apolitical has called her one of the 100 most influential people in climate policy.

How did you become involved in climate finance?

I'm an economist by training, focused on environmental sciences, so from early on was interested in the environment and climate, and

how you can shift the system to help preserve the world. Working in academia, I discovered that if you want change, you need to understand policymaking and policymakers' language – so I went to work for the OECD at the International Energy Agency, before helping to start CPI in 2010 to help governments and financial institutions use their resources more effectively. They come to us for advice, and we push the boundaries and come up with our own ideas on raising climate finance. We have built strong relationships with governments in the West, and are also working with governments in emerging economies such as Brazil, India and Indonesia.

The CPI "tests cutting-edge climate finance instruments that resolve financing barriers hindering alternative energy, adaptation, and land use projects" – tell me more about that.

These cutting-edge instruments are developed under a flagship project called the Global Innovation Lab for Climate Finance. We crowdsource ideas or concepts that need additional technical support and connections to investors to get them implemented. We have several criteria. One of them is being innovative, which means addressing barriers in the market



\$3.2bn

The Global Innovation Lab for Climate Finance has helped mobilise \$3.2bn of climate finance and developed more than 55 business models and financial solutions in the past 8 years

\$630bn

Around \$630bn of climate finance has been raised – around 51% from the public sector



"Working in academia, I discovered that if you want change, you need to understand policymaking and policymakers' language"

in a new or more effective way. We have developed more than 55 business models and financial solutions during the past eight years.

Can you give me an example of one of those solutions?

One of our biggest success stories is a project called Climate Investor One – a financing facility that fast-tracks renewable energy projects in developing countries by bringing three facilities into one. It has a project-preparation facility, a construction-finance facility and a refinance facility, combining donor and

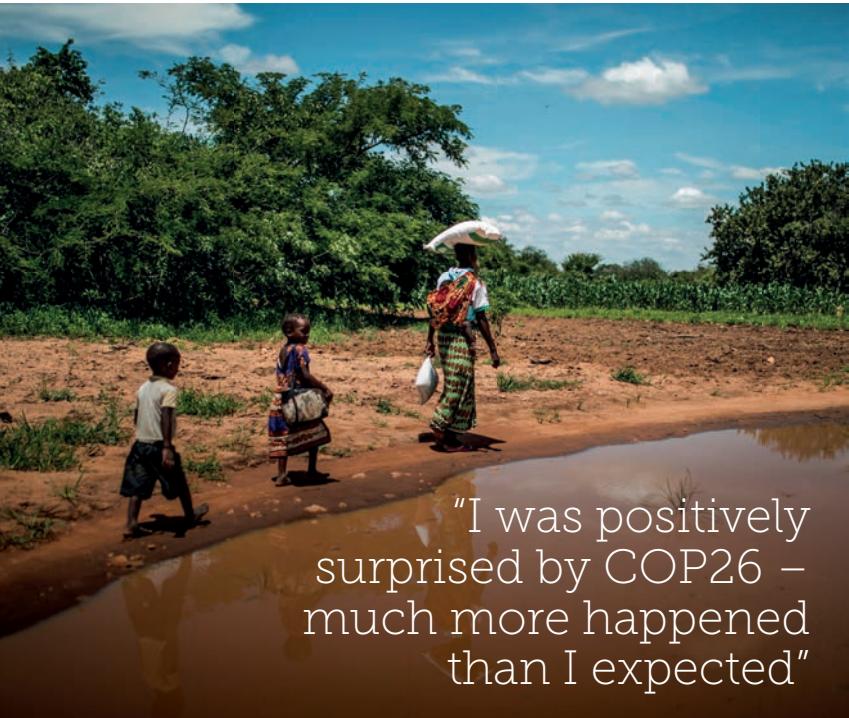
public and development finance funds in pre-operational stages to kickstart and de-risk projects, and then attracting construction stage and operational stage private investment. It's a three-phase sequential financing approach that addresses a lot of challenges associated with climate finance in developing economies so they can attract private investment. It has managed to get pension funds and institutional partners involved, which is important if we are to get to the scale we need, and the idea is being replicated for another fund focused on water, oceans and sanitation.

The CPI also tracks total climate finance raised worldwide. How do you do that, and how much has been raised to date?

We have been tracking climate finance since 2011 by pooling different data sources to give the most comprehensive information on climate finance flows.

"While \$630bn has been raised, the needs are in the trillions, so we are falling far short"

Climate finance



"I was positively surprised by COP26 – much more happened than I expected"

\$100bn

At COP15, rich countries agreed to provide \$100bn in climate finance to poorer nations each year by 2020



We continue to improve our methodologies and move into harder areas where there's not enough information, such as finance for sustainable agriculture and energy access. In global flows, around US\$630bn today has been raised – around 51% from the public sector. However, the latest figures show that around half the money that we've been able to track went to East Asia and Pacific, with China alone representing more than 80% of that amount, building on strong government supports there. That confirms a trend that we've seen for the last 10 years, which is that there's a strong domestic preference from investors.

How far are we from delivering the US\$100bn of climate finance for developing nations each year?

The US\$100bn is a starting point, but does not get us even close to where we need to go. While US\$630bn has been raised globally, the needs are in the trillions, so we are falling far short. The US\$100bn is important for building trust and delivering on commitments that

have been made in the context of negotiations. Using OECD numbers and our own information, it seems that we are close to meeting that US\$100bn commitment, but we must go beyond it if we are to meet our temperature goals.

There are also methodological issues around the US\$100bn goal, including missing definitions, and there must be more focus on climate finance quality, not just quantity. There are certain areas where private investors are not yet able to go because of the specific risks. Having a better understanding of the risks of investment in the riskiest sectors and geographies, and who is best able to cover those risks, would go a long way to improve climate finance quality. It's important for the G20 or G7 to discuss these issues.

What countries and sectors are most in need?

We have seen improvements in climate finance going to Africa, but we need to make sure that gets scaled and allows African countries to make progress, particularly on adaptation. Everyone has seen the impacts of climate change already, so there is going to be an increasing need for adaptation and measures. It might be because of data issues, but we are only able to track about 7% of the overall chain of money raised for adaptation. So that is a big need, and needs additional focus and support.

In terms of allocation, we continue to see most of the money going towards mitigation or renewable energy and transport, because we still need to phase out fossil fuels, and there has been a lot of progress on new technologies. It is also important to think more generally about infrastructure and how we build our economies in a more resilient way.

What were your feelings about COP26, and what do you hope to see at COP27 later this year?

I was positively surprised by COP26 – much more happened than I expected. It was particularly positive to see deals on accelerated coal retirement and the phasing out of fossil fuels. There was also a lot of focus on nature, which is positive and needs to happen more, and there was a strong presence from the private sector, which is now more in the picture than it was in the past.

Looking ahead to COP27, while US\$100bn of climate finance for developing nations is not enough, it is an issue of trust, and I hope that we can see it as a starting point to go beyond. I hope there is also more attention on scaling up adaptation finance, and concrete projects and partnerships would be welcome. It is then up to CPI to show whether those pledges hold up, and to measure the impact and integrity of those commitments.

What do you picture when you think of a roof? Probably a pitched roof with tiles, a felted flat roof, or even a metal warehouse roof. A roof is probably the last thing you would imagine when considering climate change adaptation – but recent research from the University of Southampton and the National Federation of Roofing Contractors makes the case that the way we build, maintain and retrofit our roofs may actually help the UK to mitigate some of the impacts of climate change on the built environment.

A changing climate

The research, *Future (P)roof – Building resilience of roofing technologies in a changing climate* (bit.ly/FuturepRoof), was based on the most recent UK climate change modelling, UKCP18, published in July 2021. This forecasts that the UK is expected to have not only warmer and wetter winters, but also higher temperatures in other seasons, including more heatwaves and higher summer irradiance due to clearer and drier skies.

There is expected to be an increase in predicted peak rainfall (90th percentile) in a 24-hour period – so more high-intensity rainfall events. *Future (P)roof* took this modelling and applied it to a range of built forms in 15 cities across the UK. It identified that the major risks to the built environment from climate change would be overheating and flooding.

Overheating is already a problem in the UK during the summer, and is only set to intensify. In Islington, London, temperatures are expected to rise by 3.3°C by the 2080s, and its daily maximum temperature is expected to increase from 22.2°C to 27.9°C during the same period. Loft conversions are particularly exposed, and this could be an issue for southern UK cities as early as 2030.

In addition, river, groundwater and surface flooding due to extreme weather events are regarded as medium risks today by the government's Independent Assessment of UK Climate Risk in terms of building damage and productivity loss.



UP ON THE ROOF

Gary Walpole explains how roofs could hold the solution to climate change adaptation

Roofing technology

Future (P)roof explained how roofing technology could mitigate both risks. Overheating may be addressed by using 'cool roof' technology, designed to reflect more sunlight and absorb less heat. This can be achieved using highly reflective paint, tiles or waterproof coverings.

Green and blue roof technology could be used in conjunction to tackle flooding and overheating. Green roofs cover a conventional roof with a waterproof layer, a growing medium and vegetation. As well as reducing climate change impacts on the building itself, green roofs help mitigate the impact on the surrounding environment by reducing the urban heat island effect. They also act as an important source of biodiversity in urban areas, as well as a social amenity if they are accessible.

Blue roofs are sustainable urban drainage systems that

25%
of heat is lost through
the roof in a typical home

attenuate and manage stormwater over a 24-hour period, rather than allowing it to rapidly flow down to ground level. They offer greater environmental performance when designed beneath a green roof, which acts as a 'sponge' for rainwater.

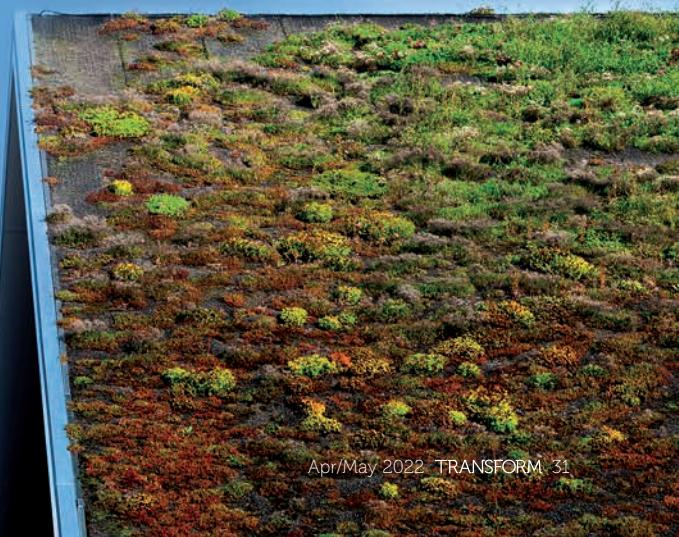
In terms of energy resilience, the typical pitched roof can be retrofitted to include built-in solar PV, generating electricity for the property, as well as enhanced roof insulation, which reduces heat demand (in a typical home, 25% of heat is lost through the roof). Commercial roofs are also an ideal location for solar, and research has shown that rooftop solar installed at scale in a city such as Southampton could provide 25% of that city's electricity demand.

Breaking down barriers

The case for using our roofs to adapt to climate change is clear, so why are we not urgently retrofitting them at scale? Unfortunately, many barriers remain – from planning policy and a lack of green skills in the industry, to financial barriers among households and businesses. *Future (P)roof* makes recommendations to industry, local and central government on how to break down these barriers.

Next time you look up, think about the potential our roofscape holds to reduce the impact of climate change and build a more sustainable energy system. We need to make it a reality. [†]

GARY WALPOLE is a safety, health and environmental officer at the National Federation of Roofing Contractors.





Environmental, social and governance (ESG) investing has exploded in popularity during the past decade, enticing investors with the promise of making financial returns while tackling the world's greatest challenges. A record US\$649bn was poured into ESG-focused funds worldwide last year, according to the latest Refinitiv Lipper data – up from US\$542bn and US\$285bn in 2020 and 2019. Such funds now account for 10% of global fund assets. A recent survey by Natixis Investment Managers found that around three-quarters of institutional investors believe ESG considerations are an integral part of sound investing, and half think that companies with better ESG track records generate greater returns.

ESG has become an integral part of the stakeholder capitalism system that so many corporations now champion. "We focus on sustainability not because we're environmentalists, but because we are capitalists and fiduciaries to our clients," BlackRock founder Larry Fink wrote in a letter to CEOs earlier this year. "Stakeholder capitalism is not about politics. It is not a social or ideological agenda. It is not 'woke'. It is capitalism, driven by mutually beneficial relationships between you and the employees, customers, suppliers, and communities your company relies on to prosper."

However, ESG investment has come under scrutiny recently, after a former BlackRock employee questioned its impact in the essay 'The Secret Diary of a Sustainable Investor'. As chief investment officer for sustainable investing – which manages over US\$6.8trn of assets – Tariq Fancy oversaw ESG in BlackRock's global investment processes. He argues that the impact of ESG investment is overstated and discourages governments from implementing the changes needed to tackle key environmental and social issues.

The Financial Conduct Authority and the European Commission are paying attention to accusations of greenwashing in financial services. Here, Fancy and two other experts outline the concerns. [T](#)

ESG investment is coming under intense scrutiny, with some saying it could be doing more harm than good. **Chris Seekings** speaks to three experts

Another inconvenient truth?



Is ESG investment helpful, or does it simply allow firms to greenwash their activities? To publish your views, contact features@iema_transform.com

The big question

The big question: Is ESG investment effective?



TARIQ FANCY

CEO, Rumie; formerly chief investment officer for sustainable investing, BlackRock

"There's no reason to believe it changes anything"

My concern is the lack of evidence of real-world impacts. People believe you're investing in 'good' companies, when you're just moving to a different basket of public shares. Some hedge funds will still buy them, so you're just reshuffling things. Based on how markets work, there's no reason to believe it changes anything.

The narratives say you can invest in a low-carbon exchange-traded fund, beat the market, make money and fight climate change. We have an inconvenient truth: it's going to cost trillions to remake an energy system that was built to exploit cheap fossil fuels. It's like giving green juice to a cancer patient.

The best thing we could do is regulatory reform; the most wide-reaching thing is a carbon tax. Before the pandemic, 71% of Americans believed the economic system was rigged. I don't think any individual is to blame – the system optimises for profits because it's incentivised to do so.

The ESG community could be more honest about what works, and pay more attention to the role of companies in driving change – any firm that hides its political spending should score a zero. Every year, ESG grows alongside carbon emissions inequality, which destroys faith in capitalism. It doesn't look like a mistake, it looks like a heist.

IMAGES: ISTOCK



DAVID PICTON

Senior vice president of sustainability, Alcumus

"Customers expect proof and third-party audit"

ESG programmes are now mainstream, organisations engage with sustainability meaningfully, and many lean into it as an opportunity to create value and purpose.

There are increasing requirements, but this misses the impact of the most potent force – customers and society. COP26 accelerated emphasis on carbon reduction, but expectations from clients, employees and suppliers extend beyond climate action, through social value and into areas such as ethics.

The most effective ESG strategies set a Challenging Balance (across three ESG pillars) that Changes Behaviours for Commercial Benefit. Alcumus research has shown that most businesses see significant ESG impacts and expect this to increase. Nine out of 10 are investing in or planning to adopt technology and tools to track ESG performance.

Customers and commentators expect proof, evidence and third-party audit to back up ESG claims. Coherent data visibility is key. ESG strategies must have genuine action plans, track outcomes and be authentic. This realisation is driving companies away from spreadsheets and manual calculations, and towards gaining one true view of their ESG data through digitised technology platforms.

More sustainable business will come from trust in organisations, legislation in specific areas, and societal expectations.



MATT ORSAGH

Senior director of capital markets policy, CFA Institute

"We have to change how we live – not how we invest"

More ESG investment vehicles are making their way to market, but they are often just chasing the trend. Some may perform rigorous analysis to integrate ESG into the investment process, but that is rare.

Many fund prospectuses use the catch-all phrase 'ESG', which makes them hard to compare. Investment professionals must improve transparency to ensure investors' good intentions are met. The CFA Institute recently launched its Global ESG Disclosure Standards for Investment Products, a set of guidelines for fund managers that aims to improve disclosure of how a product considers ESG issues.

Because there is no agreed-upon definition of ESG, investors must ensure the fund they are buying has a similar definition to their own. Most ESG funds are not structured to help solve a problem such as climate change – they mostly tilt towards companies that will suffer less or benefit more in a certain environment, such as a carbon-constrained world. If investors want to invest in 'outcomes' or 'impact', they need to look for specific funds that focus on impacts.

To tackle issues such as climate change, we must make different societal choices. Not putting more carbon in the atmosphere is more impactful than your choice of ESG fund. We have to change how we live – not how we invest.

Why did you become an environment/sustainability professional?

In the mid-1990s, the Newbury bypass protestors ignited something: construction wasn't respecting the environment, yet here were young people standing up, taking action, putting themselves at risk and doing what our industry should have been doing – I nearly joined them! However, as an aspiring construction professional, I needed a more strategic vocation – so I started seeking opportunities to align and enact 'change from within'.

What was your first job in this field?

In 1997 I became a site enviro-rep, explaining impacts and control measures on a conservation zone hospital development to new workers, project staff and affected neighbours.

How did you get your first role?

I volunteered! I was keen to absorb the topic, so related tasks came readily, but my first full-time role emerged much later. In 2006, when nominations landed for a two-year leadership programme, I jumped at the chance. A team project was required and my pitch to 'make sustainability real' was selected and won the board's approval for implementation.

What does your current role involve?

Providing environmental, social and governance leadership, accountability and support across Brookfield European real estate businesses, covering a circa. £40bn portfolio that includes Canary Wharf, Center Parcs, Potsdamer Platz in Berlin, and more than 20 portfolio companies in areas such as student housing, hospitality, logistics, retail and life sciences.

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

I've moved from being an activist to an activator; we're being welcomed to the table to provide real solutions.



CAREER PROFILE

Martin Gettings

FIEMA CEnv

Head of ESG for Brookfield's European real estate business

What's the best part of your work?

The chance for serious influencing across global real estate. I'm proud to be an ambassador for sustainability.

What's the hardest part of your job?

Losing time and opportunity.

What was the last development event you attended?

I chaired a Sustainability Scholars panel debate on nature-based solutions in the built environment.

What did you bring back to your job?

A renewed focus on our most important stakeholder: **nature**.

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

Enthusiasm. Knowledge. Network. Empowerment.

Where do you see the profession going?

Deeper integration with other professions. I think we'll see appropriate and aligned sustainability competencies as part of every professional pathway. We need sustainability in the hearts and minds of every professional – young and old, and from every walk of life.

If you would like to contribute a member profile contact: media@iema-transform.com

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

Deployed wherever I'm needed to enact change in my sphere of influence.

What advice would you give to someone entering the profession?

Align yourself with your 'now', but journey to meet your potential, grow and go wherever that takes you. Build character and resilience, but enjoy the pathway. We find purpose when we align ourselves with our own unique positions of maximum influence, vocation, passion and talent. Look at the Japanese concept of *ikigai* – your reason for living. Above all, stay positive – now is our time.

How do you use the IEMA Skills Map?

To inspire development pathways.



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

I've been called irrepressible, credible and agreeable. Sounds about right!

What motivates you?

Development, progress and doing things properly.

What would be your personal motto?

Together we can.

Greatest risk you have ever taken?

Moving to **London** was an opportunity, as was my recent move to Brookfield.

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

The architects and builders of the ancient monuments – Stonehenge, the **Great Pyramid**, Sacsayhuamán. After millennia, their former glory is lost, but they remain – so the ancients did something right. I'd like to ask why, how and when they built them. Ancient civilisations established a deep connection with the Earth and its natural systems, which we have lost. Imagine if we rediscovered it. 





DATES FOR YOUR DIARY

iema.net/events

WEDNESDAY 30 MARCH

CONFERENCE

The Ignition Project – Investing in Nature: Lessons from Greater Manchester

Chaired by IEMA CEO Sarah Mukherjee MBE, this is a hybrid event. We are in the midst of a biodiversity and climate crisis. There is a huge gap in financing that must be addressed if we are to secure a safe and resilient future for our communities.

➤ www.ignitionproject.org

THURSDAY 31 MARCH

WEBINAR

Building a regenerative business: Living within social and planetary boundaries

Yorkshire and Humberside Region will explore the Future-Fit Foundation's approach to building a regenerative business. Using social and planetary boundaries as guidelines, we will explore what companies must do to avoid harming our collective progress toward a flourishing future, and what they can do to get us there more quickly.

➤ bit.ly/York_Regen

TUESDAY 5 APRIL

ONLINE

Net zero – What are you up to?

Calling IEMA members based in Sussex and Surrey for our latest coffee morning. We'll be discussing net zero – what we are all doing in our organisations, how we can raise awareness further, and any challenges we need to overcome. Join the conversation and share your experiences.

➤ bit.ly/SS_NZcoffee

THURSDAY 14 APRIL

ONLINE

Midlands: Meet the Team

Don't miss your chance to meet the IEMA Midlands Regional Network at our upcoming event.

Each member of the Midlands Regional Steering Group will give an introduction and their professional backgrounds, with a chance for a Q&A at the end of the session.

➤ bit.ly/Mid_MeetTeam

TUESDAY 26 APRIL

CONFERENCE

Energy and sustainability in the public sector 2022

Hear from key policymakers and gain the most up-to-date information on government policy and implementation goals. Listen to Toby Shaw, IEMA director of commercial marketing, at his session on the green jobs of the future. IEMA members benefit from a 20% discount on tickets (bit.ly/IEMA_AfPart).

➤ bit.ly/IGPP_EnSus

WEDNESDAY 27 APRIL

CONFERENCE

University and Healthcare Estates and Innovation Conference and Exhibition

This unique forum brings together estate directors from the NHS and universities to encourage the sharing of best practice.

The conference is supported by an exhibition featuring the leading providers to both the NHS and university sectors.

IEMA members benefit from a 20% discount on tickets (bit.ly/IEMA_AfPart).

➤ bit.ly/UHEIconf

THURSDAY 26 MAY

EVENT

The Second Annual Race Inclusion and Diversity in the Workplace Event

This will give organisations practical and actionable insights to determine next steps in their race-related inclusivity and diversity journey. Through policy updates and case studies, delegates will gain comprehensive information on topics such as company-wide inclusive leadership, ethnicity pay gaps, attracting and recruiting ethnic minority talent, and new models of diversity practice.

➤ bit.ly/IDinWorkplace

If undelivered please return to:

IEMA
The Old School House
Dartford Road
March
PE15 8AE



Transforming the world
to sustainability

VisitIEMA @iemanet

IEMA Impact Report 2021

2021 proved to be a real year of success – welcoming more members than ever before and working on the diverse sustainability initiative and with colleagues around the world on international standards and policy. The IEMA 2021 Impact Report will be available from 31st March and will showcase the growth in membership, training and partnerships, as well as making important steps forward in policy, influence, legislation, diversity and more.



Access the report by scanning the QR code
or by accessing the link here:
iema.net/about-us/impact-report-2021