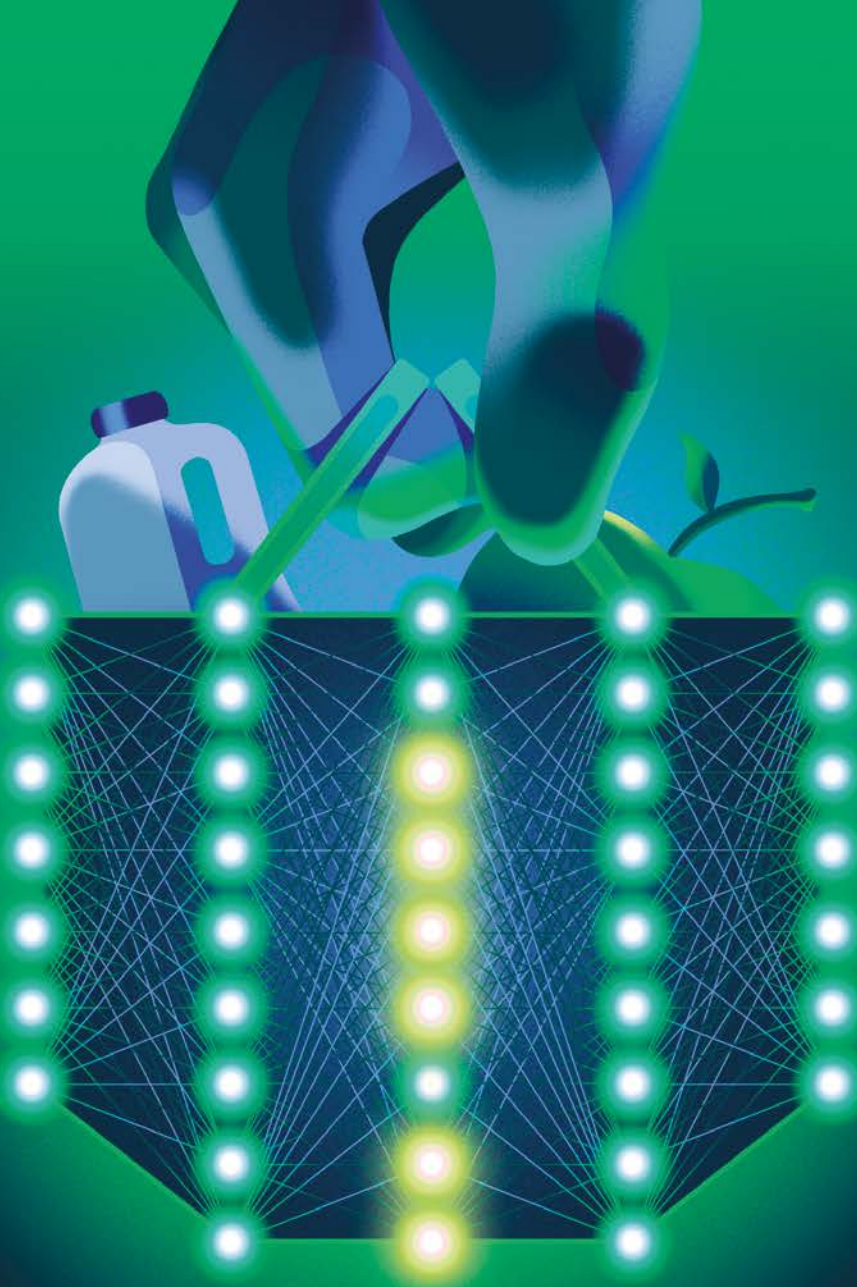


TRANSFORM

For environment and sustainability professionals

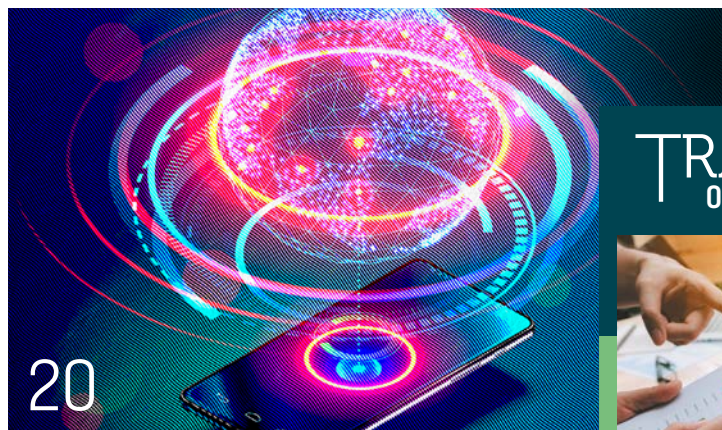
Environment ●
Economy ●
Society ●

May/June 2026
isepglobal.org/engage/transform



SMART SHOPPING?

Behind every basket is
an algorithm at work



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SARAH MUKHERJEE MBE, CEO, ISEP

Connectivity challenge

Hello, and welcome to another edition of *Transform* magazine. In this issue, we explore several of the challenges and opportunities that are emerging from today's rapidly evolving technological landscape. During Covid-19, the global food system was stretched to its limit. In recent years, artificial intelligence has increasingly filled the roles that were, in many cases, once occupied by humans. But in removing the costs associated with people, have we also introduced a new fragility, with potentially severe consequences? Huw Morris investigates.

Another global network vital to modern life is telecommunications. In our work, we often highlight the importance of partnership and collaboration in building resilience across complex supply chains – but how does this work in the highly competitive world of telecoms? Jana Kovandzic Pataky explains how one sector is achieving collaboration beyond competition.

For many people living in urban areas, parks and green spaces provide not only environmental and associated health benefits but also significant cultural and heritage value. But parkland is under increasing threat from climate change as well as developers and urban sprawl. So how can these much-loved spaces be made resilient in the face of a rapidly changing climate? Pedro Flores, head of sustainability at the UK's The Royal Parks, speaks to *Transform* about how these incomparable landscapes can be made fit for future generations.

We do hope that you enjoy this edition, along with the many other exclusive articles that are featured online. As always, we welcome your thoughts and comments – many of the articles we share are inspired by your suggestions.

“Artificial intelligence has filled many roles once occupied by humans. But in removing the costs associated with people, have we introduced a new fragility, with potentially severe consequences?”



The Institute of Sustainability and Environmental Professionals (formerly the Institute of Environmental Management and Assessment)
Company Limited by Guarantee.
Registration Number: 03690916
Place of Registration: England and Wales
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Warners Midlands Plc



Published by

Redactive Publishing Ltd
9 Dallington Street, London
EC1V 0LN
020 7880 6200
redactive.co.uk



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

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ISSN 2515-9151

The paper used to print *Transform* comes from sustainable sources.



ROUNDUP

ISEP NEWS AND COMMENT

OPINIONS

New polling finds strong support for net zero, amid doubts about UK delivery plan

A YouGov poll carried out for ISEP found that 50% of UK adults support the goal of reaching net-zero carbon emissions by 2050, but only 12% believe that the government has a clear path for achieving it.

The survey of 2,153 UK adults found that 50% of respondents think cutting carbon emissions to net zero by 2050 is important, compared with only 21% who think it is not important. It also reveals a nation that is divided on climate action, with differences of opinion shaped by political identity, generational differences and socioeconomic status.

Despite continued support for climate action overall, the research suggests that more needs to be done to communicate a credible delivery plan. Just 12% of respondents think that the UK government has set out a clear pathway for achieving net zero by 2050 (placed as 7 to 10 out of 10 on a scale).

The findings come ahead of the UK government's seventh carbon budget, due to be set in law by the end of June, which will outline emissions reduction targets for 2038-2042 under the 2008 Climate Change Act. Since the UK adopted its legally binding net-zero target for 2050 in 2019, carbon budgets have played a major role in mapping the pathway to delivery. The poll suggests that the government faces a dual challenge: maintaining public support for climate action while providing a clear, economically credible roadmap for achieving its goals.

However, attitudes differ across the political spectrum. Among those who voted

Green in the 2024 general election, 77% said that reaching net zero by 2050 is important (rating it as 7 to 10 out of 10 in importance), as did 71% of Labour voters and 66% of Liberal Democrat voters. Support falls to 34% among Conservative voters and just 12% among Reform UK voters.

Signe Norberg, director of policy and public affairs at ISEP, said: "Decarbonisation remains a critical priority, economically and socially – and continues to have public support. Despite a political fragmentation surrounding climate policy in the UK, this poll

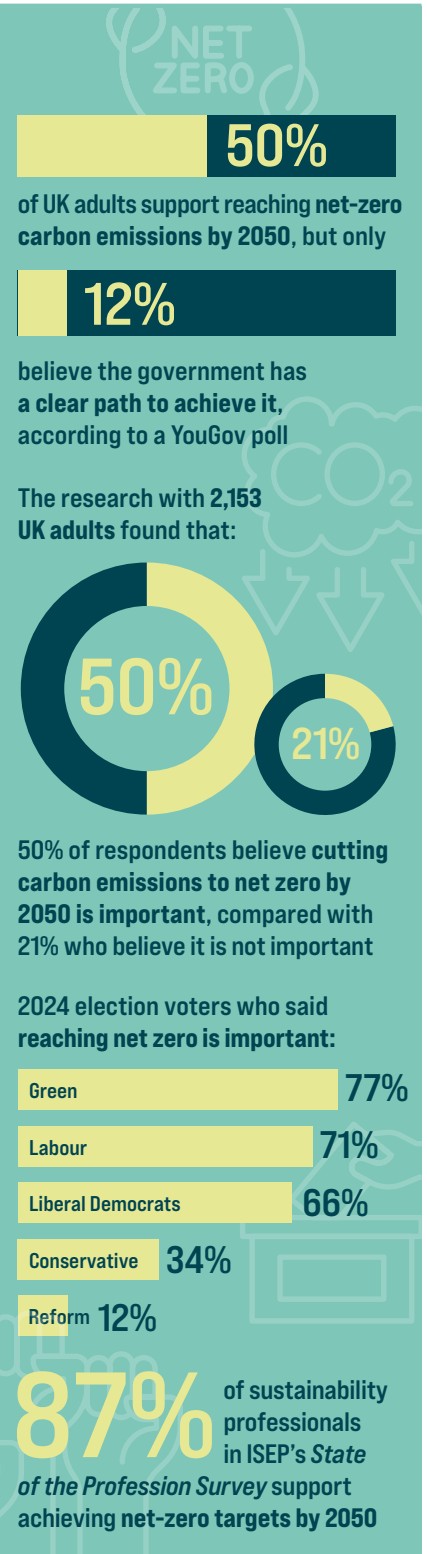
finds that twice as many people support the UK's climate target as oppose it. That support is holding, even amid a cost-of-living crisis, rising energy prices and growing concerns around energy security."

Age also shapes attitudes to climate action. Nearly two-thirds (62%) of 18- to 24-year-olds view net zero as important,

compared with 43% of those aged over 65. Men are also more sceptical than women: 28% of men say net zero is unimportant (rating it as 0 to 3 out of 10 in importance), versus 16% of women.

The YouGov poll was conducted alongside ISEP's forthcoming *State of the Profession Survey*, due to be published in July, with several questions designed to compare the views of sustainability professionals and the wider public. The ISEP survey found overwhelming support (87%) for achieving net-zero targets by 2050, although just over a third (36.3%) thought that the UK had a clear roadmap to reach the target.

“**More needs to be done to communicate a credible delivery plan**”



GUIDANCE

New framework targets construction waste crisis

The Circular Economy Steering Group has published new industry guidance on Material Pathway Auditing (MPA) in the Built Environment, designed to help the construction sector make better use of existing materials during repurposing, retrofitting, deconstruction and demolition projects. Crucially, it integrates audit findings into concept design, procurement and contractor engagement, ensuring that circular economy principles actively shape decision-making early. The guidance provides a step-by-step framework that is scalable to any project type. It includes a practical decision tree to determine an audit's appropriate scope, guidance on preparing materials inventories and opportunities registers, and recommendations for embedding MPA



requirements into contracts and site practices. The UK's Circular Economy Growth Plan expected this year, and ISEP recommends that the MPA approach is incorporated into the construction sector route map. By applying systems-based thinking to the materials already present on sites, the government can build a resilient, sustainable construction sector. **Read the guidance at bit.ly/MPABE-tra**

PUBLICATION

Impact Assessment Outlook Journal Vol. 27, Modified methodologies: exploring sector-based approaches in impact assessment

This latest volume explores how sector-specific approaches are reshaping impact assessment practice. Challenging the idea of a single, standardised model, the collection highlights the growing need for flexibility and proportionality in response to increasingly complex environmental, technological and regulatory pressures. Contributors demonstrate how tailored approaches can better align environmental considerations with project delivery, from managing



the long-term uncertainties of nuclear decommissioning to embedding assessment within governance frameworks. The volume also examines the impacts of fragmentation, particularly at the land-sea interface and in emerging sectors such as data centres. Looking ahead to new regulatory frameworks, the collection calls for greater clarity, stronger capability and continued cross-sector learning. **Read more at bit.ly/IAVol27**

FRAMEWORK

What's inside England's Land Use Framework?

LESLEY WILSON

Published in March 2026, England's Land Use Framework is the first national, long-term approach to managing the ways in which land can improve resilience to climate change, accelerate housing and infrastructure delivery, restore nature at scale and maintain food production and farm profitability. It establishes guiding principles for decision-making, including delivering multiple benefits from land, reflecting local context, using evidence-based long-term approaches, and remaining adaptable to change.

Importantly, the framework commits government to publish improved land-use data, with accessible, linked datasets to support more informed and joined-up decision-making. However, links to other departments remain unclear, as does the relationship with the National Planning Policy Framework. On 27 May, ISEP will host Defra representatives to explore what the Land Use Framework is and what it means for sustainability professionals. **See the website for more information**

ALAMY

INQUIRY

ISEP gives evidence to parliament on climate adaptation

ISEP chief executive Sarah Mukherjee MBE gave oral evidence at the All-Party Parliamentary Group for the Environment's first adaptation inquiry session on 13 April. Addressing flooding and weather risks, she highlighted gaps between climate risk assessments, planning policy and delivery. Mukherjee stressed the need to treat nature as national infrastructure, embed adaptation in housing, infrastructure and land-use decisions, and strengthen skills and standards. She also emphasised long-term investment, clearer accountability and joined-up governance to turn adaptation policy into resilience.

CONSULTATION

NPPF consultation response

In March, ISEP responded to the government's National Planning Policy Framework (NPPF) consultation, emphasising that robust environmental assessment and evidence-based planning are crucial to effective decision-making. Planning must balance growth and infrastructure delivery with protecting and enhancing the environment. Environmental safeguards, and clear planning conditions, implementation and monitoring, are essential for sustainable outcomes. Climate mitigation and adaptation must be central to policy. ISEP supports reforms that improve efficiency and clarity without weakening expert assessment and accountable decision-making. **Read the full response at bit.ly/NPPF-ISEPres**

PLANNING

Reflection on EOR roadmap

England's transition to Environmental Outcomes Reports (EORs) will change how the planning system assesses environmental effects. Responding to the government's roadmap, ISEP set out a clear and timely position: reform must strengthen, not weaken, environmental protection and enhancement. Public participation and transparency must be maintained and enhanced, ensuring that communities play a meaningful role. Equally important is the need to address planning system capacity and skills gaps. Without adequate investment in expertise, guidance and well-resourced regulators, the new system risks inconsistency, delay and reduced environmental oversight. EORs could deliver a more effective system, but only if they safeguard and enhance the environmental protections at their core.

POLICY WATCH



ISEP joins Development Industry Partnership

Sigine Norberg, director of policy and public affairs at ISEP, has joined the UK government's Development Industry Partnership, led by Defra. At its first meeting, industry representatives gathered to launch the partnership, which aims to strengthen Defra's understanding of how developers experience environmental regulation. Norberg stressed the need to accelerate nature restoration alongside economic growth and new housing and infrastructure delivery, emphasising that major reforms must be supported by clear guidance, greater capacity and stronger skills provision.

Measuring and delivering environmental outcomes

In April, ISEP brought together policymakers, regulators and industry leaders to explore how environmental outcomes can be measured and delivered more effectively. A key highlight was a roundtable with Natalie Prosser, chief executive of the Office for Environmental Protection, which focused on Environmental Improvement Plan targets, accountability and data quality. Discussions highlighted the need for credible monitoring, transparent reporting and professional expertise to turn long-term environmental ambitions into practical action. **Find out more at bit.ly/MEO-tra**

CORPORATE MEMBERS

Showcasing leadership at major pharmaceutical industry event

ISEP exhibited at the Making Pharmaceuticals, Distributing Pharmaceuticals and Making Nutraceuticals conference on 21-22 April at the Coventry Building Society Arena. The two-day event brought together professionals from across the pharmaceutical and nutraceutical sectors, creating a valuable forum for discussion, knowledge sharing and collaboration.

Throughout the conference, ISEP's corporate team welcomed a steady flow of visitors to its stand. Conversations focused on the sector's sustainability challenges while also providing an opportunity to introduce new contacts to ISEP's work, broaden its professional network and engage with existing members to better understand their current priorities and experiences.

ISEP's deputy CEO, Martin Baxter, delivered a presentation on the challenges and opportunities of sustainability in the

pharmaceutical supply chain. The session explored key themes including regulation, supply chain complexity and the role of collaboration. A summary of the presentation can be found at bit.ly/MBaxBlog

Baxter also contributed to a great panel discussion within the 'Making Nutraceuticals' strand of the conference, entitled 'Embracing sustainable packaging for tomorrow's consumer' and hosted by the Health Food Manufacturers' Association (HFMA). Contributors underscored the need for greater support and guidance as the sector prepares for the forthcoming changes to the Packaging and Packaging Waste Regulation, due in August.

● For more information on corporate partnerships in the healthcare sector, visit bit.ly/CP-Health

● Contact Claire Keen, corporate partnership manager – healthcare c.keen@isepglobal.org



Panel (left to right): Nick Bennett, ADM (facilitator); Charlie Wigfall, HBI Thompson & Capper; Martin Last, HFMA; Alice Harlock, OPRL Ltd; Martin Baxter, ISEP

NEWS IN BRIEF

Climate policy expert Andy Jordan joins UK CCC

ISEP Fellow professor Andy Jordan, director of the Tyndall Centre for Climate Change Research at the University of East Anglia, has been appointed to the UK Climate Change Committee (CCC) for

a five-year term. With more than 30 years' experience in environmental and climate policy, he is internationally recognised for his research on how governments design, coordinate and innovate public policy for sustainability, particularly in the EU.

Collaboration unlocks stronger carbon literacy training

ISEP recently hosted a joint session with the Carbon Literacy Trust and respective trainers to highlight how our training programmes

complement each other, and how trainers can strengthen their offer by delivering both carbon literacy training and ISEP courses.

● Find out more about ISEP and Carbon Literacy at bit.ly/CarbLit

DIVERSE SUSTAINABILITY NETWORK

Championing inclusive change

ISEP, in collaboration with the Diverse Sustainability Initiative (DSI), is once again delivering a standout event

in its calendar, bringing together professionals for an inspiring and effective face-to-face gathering.

Designed to elevate the voices of people from underrepresented backgrounds, share lived experiences and shape how organisations can better support people within the profession, the day will feature a keynote address,



Diverse Sustainability Initiative

an interactive workshop and candid discussions from professionals sharing their personal journeys.

A full report on this event will be featured in the next issue of *Transform*.

To stay connected with the DSI's work and help to drive inclusive change across the profession, sign up as a network member or partner.

● For further information about upcoming events, DSI activities and how to get involved, please contact info@diversesustainability.net

SUSTAINABLE BUSINESS BENCHMARK

Can you pinpoint your sustainability progress?

Understand where your organisation stands – and where to go next. The ISEP Sustainable Business Benchmark helps you to assess performance, celebrate strengths and close the gaps that hold you back.

Developed by ISEP's Corporate Partnership team with cross-sector insight, it reflects the real challenges

faced by businesses today, offering a credible, action-focused framework for impact.

Use it to drive informed decisions, prioritise what matters most and demonstrate clearly the value of sustainability to stakeholders.

● Take the ISEP Sustainable Business Benchmark at bit.ly/SBBappTra



FELLOWS CORNER

Fellows Network drives action on sustainable supply chains

April's Fellows Network meeting brought together insight and collaboration with contributions from Heidi Barnard ISEP (NHS Supply Chain) and Andy Griffiths ISEP (Diageo) on how their work with ISEP's Corporate Team has developed the sustainability of teams and suppliers across their organisations.

The second half of the session moved into Fellow-led breakout discussions, generating ideas and identifying potential outputs across key topics: artificial intelligence (Martin Baxter), risk-led management (Gill Mulroe), sustainable energy (Diana Lock), policy practices (Michelle Papayannakos), aviation (Chloë Fiddy, on behalf of Tom Yearley) and business ownership (Brian Menzies and Becky Toal). The discussions' outcomes will be reviewed by the Fellows Steering Group to determine next steps.

● Looking ahead, ISEP will be hosting a Fellows-only meeting during



Heidi Barnard ISEP and Andy Griffiths ISEP

London Climate Action Week on 23 June, featuring professor John Dora ISEP as keynote speaker.

Be inspired by the voices of our Fellows and learn how you can join this prestigious network shaping the future.

● Contact e.morris@isepglobal.org

How to become a Fellow

To find out more about the network, you can attend: **Becoming an ISEP Fellow, a digital workshop on Wednesday 1 July, 12:00–1:30pm (GMT+1).** bit.ly/ISEPFellowW This interactive session is limited to 10 participants and is open to non-members for a fee of £36. Members can also access the **Connect 2025 recorded session** via MyISEP.

NETWORK FOCUS

G'day from Australia

Australia's sustainability context is unlike almost anywhere else. Spanning a continent of remarkable geographic and ecological diversity, from tropical rainforests and deserts to golden coasts and alpine regions, it presents sustainability challenges and opportunities on an immense scale

Central to this is the custodianship of Aboriginal and Torres Strait Islander peoples, the world's oldest continuous living cultures, and their deep relationship with land and country. Alongside this, Australia's large-scale industries and natural resources carry global significance, particularly its critical minerals. Responsible for 43% of 2024 global lithium production, Australia is an important contributor to the global energy transition.

ISEP Australia is an active and growing network of sustainability and environmental professionals across the continent. Our steering committee spans Victoria, New South Wales, Queensland, South Australia and Western Australia, reflecting both our geographic reach and the diversity of sustainability practice nationwide.

We are committed to connecting members, strengthening the profession and providing a welcoming point of contact for those seeking to understand the local context, build networks and engage with sustainability practice in Australia. We warmly welcome members who are considering a move to Australia and offer a friendly point of contact to support them as they navigate the professional landscape.

Meet the Australia steering committee:

- Euan Ronald FISEP (VIC) chair
- Anna D'Arcy MISEP (VIC) vice-chair
- Lianne Smith MISEP (WA)
- Kevin Mundy FISEP (WA)
- Marguerite Collins MISEP (NSW)
- Paul Osmond PISEP (NSW)
- James Backshall PISEP (WA)
- Kimberley Hague MISEP (QLD)
- Ciaran Parkes PISEP (VIC)
- Kyle Cullen MISEP (QLD).

We also value our strong relationships with our counterparts in ISEP Hong Kong and ISEP New Zealand Aotearoa through regional events and shared learning.

EVENT

Join ISEP Australia, Hong Kong and New Zealand for an engaging online briefing on ISO 14001:2026 – what's changing and why it matters. The session will feature insights from

ISEP deputy CEO Martin Baxter, drawing on his role within ISO/TC 207.

This international event will bring together regional perspectives to explore how the updated standard will shape

environmental management practice across Australia, Hong Kong and New Zealand.

● To find out more about the ISEP Global Networks, visit bit.ly/ISEPGnetw

INTERNATIONAL DIARY

NEW ZEALAND – SWITCHING UP HEATING: LOW-CARBON SOLUTIONS THAT WORK

DIGITAL EVENT | Thursday 11 June

12:00-1:00pm NZST

(1:00-2:00am BST)

Join a global session exploring innovative low-carbon heating solutions. As winter approaches, discover emerging systems such as ground-source heat pumps, wood-pellet heating and natural low-global-warming potential refrigerants, and how they compare with conventional methods in real-world applications.

● To register: bit.ly/NZLowCarb

EUROPE – TALKING NATURE AND BIODIVERSITY: WHY THEY MATTER

DIGITAL EVENT | Friday 12 June

9:00-10:00am CET (8:00-9:00am BST)

Dr Bianca Nijhof, a sustainability expert with a PhD in landscape ecology and experience in government, business and NGOs, will be in conversation with co-chair Damien Plant FISEP, sharing practical insights shaped by their engagements at COP15 and COP16.

● To register: bit.ly/EuroNatbio

WEST SCOTLAND – DISCOVER THE UK'S LARGEST ONSHORE WINDFARM: WHITELEE SITE VISIT

IN-PERSON EVENT | Saturday 20 June

10:30am-2:00pm BST

Enjoy a guided bus tour of an operational wind farm, offering firsthand insight into renewable energy generation. Drop into the visitor centre for refreshments, networking and an interactive exhibition by Glasgow Science Centre, plus a guest talk and Q&A on ScottishPower Renewables' project pipeline and industry developments.

● To register: bit.ly/ScotWhitWind

The launch of the system to support digital waste tracking is finally rolled out, writes **Neil Howe**



A brand-new beta system is open for public testing and will hopefully be a crucial tool in the ongoing fight against waste crime.

Digital waste tracking

In a major step forward for UK waste management, the public beta for the 'Report Receipt of Waste' service has been launched. It allows waste receivers to submit data on the waste that they handle, moving us closer to a fully accountable system where every waste movement can be tracked, verified and audited.

Digital tracking is a shift away from the current paper-based, overly bureaucratic system. The aim is to streamline admin and cut red tape, bringing clarity and confidence. It is being implemented in a phased approach to give businesses a chance to adapt. The first phase began with the beta's launch in April; using it will be mandatory from October 2026.

🔗 tinyurl.com/3jzhbnde

Deposit return scheme

From 1 October 2027, Wales will operate a deposit return scheme (DRS) for single-use drinks containers made of aluminium, glass, PET plastic and steel, and with a capacity of between 150ml and 3l. This was made possible by the Deposit Scheme for Drinks

Containers (Wales) Regulations 2026. When someone buys a container included in the scheme, they are charged a deposit on top of the price, which is refunded when the container is returned to a return point. It provides a financial incentive to dispose of drinks containers properly and helps the government better recycle the materials involved, reduce litter and move to a more circular economy. It has also been confirmed that a 20p deposit will be applied to all in-scope drinks containers under the UK's DRS.

🔗 tinyurl.com/43e9vsyu

Corporate sustainability

The EU's Omnibus I Package, amending legislation on corporate sustainability reporting and corporate sustainability due diligence requirements, is now in force. It aims to simplify rules and create a more favourable business environment to help EU companies grow, innovate and create quality jobs. The package reduces the complexity of some EU requirements for businesses, especially small and medium-sized enterprises and small mid-caps, and instead focuses regulatory frameworks on the largest companies.

🔗 tinyurl.com/3wu5jw5

Neil Howe PISEP is head of writing at Barbour EHS

IN COURT

Company pays out £6.1m over oil spill

The Environment Agency has forced Perenco UK Ltd to pay £6.1m to put right the damage done to the Dorset environment by a major oil spill. The package includes £2.6m for the initial incident response,

£2.4m for clean-up, £115k for ecological surveys, £620k to affected parties and £400k towards wildlife and access projects.

🔗 tinyurl.com/8kzdf5

Water company's appeal dismissed

In South East Water Ltd v

Environment Agency, a water company appeal against a variable monetary penalty final notice – imposed by the Environment Agency for abstracting water from a borehole without a licence – has been dismissed.

🔗 tinyurl.com/yc39rh4

ON THE WATCHLIST

Some of the key guidance and consultations working their way through parliament.

Waste duty of care

An updated Code of Practice has been published to provide guidance on the duties that need to be complied with by anyone who produces, keeps, imports or manages controlled waste in Scotland.

🔗 tinyurl.com/mwwbuaxc

UK BATs

Views are sought on proposed UK Best Available Techniques (BATs) for reducing emissions across specific industrial sectors, including ferrous metals (galvanising and forming), textiles and common waste gas management and treatment in the chemicals sector.

🔗 tinyurl.com/bdh2m3ba

PRN reforms

A consultation has highlighted possible reforms to the packing waste recycling note (PRN) system, which producers use to comply with their recycling obligations. The proposals aim to level the playing field between UK domestic reprocessors and exporters, and reduce the risk of fraud and error.

🔗 tinyurl.com/yc576z93

Waste crime

New guidance from Defra sets out the next steps for tackling serious waste crime in England. It establishes the actions taken to prevent waste crime, pursue the criminals responsible and accelerate the clean-up effort.

🔗 tinyurl.com/445succu

Parks on the climate frontline

From waterlogged soils to rising heat, the capital's iconic green spaces are under climate pressures. Pedro Flores explains the response to **Huw Morris**

Pedro Flores is quick to point to the legacy of experiencing the great outdoors early in life. Born in a small town near Porto, Portugal, and living just five minutes from a beach, he had close contact with nature as a boy and young adult.

"When I was growing up, it was just the best time to go with my friends in the summer to enjoy nature and the sea," he says. "We also have beautiful green spaces back home, so I was lucky to be near to, and to explore, nature in all its beauty. It kind of put a little bug in me to explore a career in natural conservation."

Studying environmental engineering at the University of Porto was the first step towards becoming head of sustainability for The Royal Parks, the charity that looks after eight of London's most prestigious outdoor areas (*see page 15*). Considered 'the lungs of London', most of the parks are Grade I-listed historic landscapes, with a legacy that Flores recognises well.

"The first experience with nature for a lot of the younger generation in London is in The Royal Parks," he says. "It's their first opportunity to see wildlife up close, to really have a space where their mental wellbeing can be improved just by being in contact with nature."

The climate change threat

However, that legacy is under threat from the climate crisis. The charity has unveiled a sustainability strategy up to 2030, which points out that The Royal Parks play a major role in mitigating climate change impacts by providing green spaces that act as carbon sinks, as well as supporting wildlife and offering recreational areas for

tens of millions of visitors a year. Adapting the parks so that they can fulfil their potential as crucial assets will be an important challenge for the charity to anticipate, problem-solve and prioritise in the years ahead.

"When you have such massive and unique natural capital as we have in The Royal Parks, you're going to feel the impacts of climate change firsthand and very fast," Flores says. "With warmer, wetter winters and hotter, drier summers, you have to consider the impacts from heavy rainfall that can cause water bodies within the parks to swell. The ground around these water bodies can become waterlogged, resulting in flooding in some cases."

Such waterlogging damages tree roots, which then struggle to take up oxygen, causing the soil to become saturated. Wildfires are another threat, particularly with London expected to experience reduced water availability during the next couple of decades.

"London is a heat island, first of all, so we know that the temperatures will be felt at a heightened level within the capital," warns Flores. "When you have 5,000 acres of green space, you have a responsibility to combat the impacts of climate change."

"We have tens of thousands of trees across all eight Royal Parks. That's a massive consideration for how they act as natural carbon sinks to absorb and contain all of the CO₂ within our trees and within our soils and vegetation. All parks are Sites of Importance for Nature Conservation (SINCs), so all of the natural assets have a part to play to adapt to climate change, and we have a deep responsibility to make sure that we continue to enhance biodiversity."

“

When you have 5,000 acres of green space, you have a responsibility to combat the impacts of climate change

”



Creating climate-resilient parks is one of the strategy's core aims – and this starts with understanding the ever-changing threats of climate change, Flores says. Each park is unique and has its own adaptation measures, he adds, pointing to Richmond Park's 'Slow the Flow' project – desilting bodies of water, digging new ditches, installing 'leaky dams' and log barriers to slow water flow, and creating varied micro-habitats for wildlife.

Power to the people

Engaging the public is crucial, Flores says. "We need to understand how we're going to continue to engage with our visitors and staff to encourage them to understand how the importance of environmental conservation is threaded in all our policies and strategies."

"It's one of our charitable objectives to promote sustainability in the management and use of The Royal Parks. There are multiple points that need to be achieved for parks to become resilient now and in the future for all generations to enjoy."

The strategy has three main themes: conserving parks, sustainable park operations, and parks for people – all of which went through extensive stakeholder engagement.

"We've done peer-review comparisons with similar organisations," explains Flores. "We talked to our contractors, we talked to the Friends groups, with people that have close attachments to The Royal Parks, because we needed to understand what would be important for them when it came to the sustainability strategy."

"When it comes to conserving the parks, it's all about how we're going to thread climate resilience into the park management plans, how we're going to conserve the natural and designed landscapes, how we enhance biodiversity within the parks and how we're going to protect all the water bodies."

"We want to make sure the parks can be accessible for people of all walks of life. We want to talk – to improve the

The Italian Gardens, an ornamental water garden in Kensington Gardens



“It's one of our charitable objectives to promote sustainability in the management and use of The Royal Parks

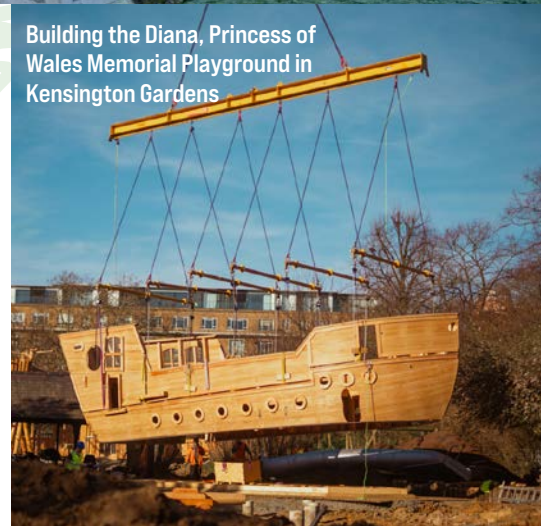
information, how we engage with volunteers and also how the volunteers engage with members of the public.”

Like many sustainability professionals, Flores is rethinking The Royal Parks' operations, with reducing emissions and looking at supply chains both paramount.

"We need to look inside the organisation and consider, when we're carrying out a project, how can we improve the sustainability performance," he says. "This means first considering the materials we use and the embodied carbon emissions from those materials."

Talking to suppliers and contractors is another important strand of the strategy. Suppliers must have strong, verifiable credentials for meeting net-zero targets, particularly given that a large proportion of the charity's scope 3 emissions come from purchases, goods and services.

Building the Diana, Princess of Wales Memorial Playground in Kensington Gardens



The strategy is important to all of the park's teams, he stresses – not just the professionals working in sustainability. Communications with visitors, particularly through social media and campaigns, drive home the environmental message "to equip people with information on how they can better interact with The Royal Parks and behave responsibly".

This extends to education and green careers: "We provide information about the challenges around park management, what careers exist in the horticultural, sustainability and environmental landscape," says Flores. "We do what we can to make sure that they understand that it's a valid, fulfilling career that they can follow in their lives as well."



Hyde Park



In the event

Every year, The Royal Parks host high-profile events that are part of London's cultural heritage, including the contemporary art fairs Frieze London and Frieze Masters, Hyde Park Winter Wonderland and the finish line of the London Marathon. These raise millions of pounds, which is then ploughed back into the parks. So what does a

responsible large-scale public event look like?

Beforehand, the charity works with events partners to put in place measures to protect the park, with each event assessed individually for suitability. The charity has a highly experienced team that ensures organisers respect the parks' environment and heritage, and the parks are fully restored after the event – funded by the event organisers. All events must also align with the parks' sustainability strategy.

"There is continuous collaboration with event organisers, where we look at sustainability management elements that come with organising these events," says Flores. "We always try to improve year-on-year the delivery of these events to reduce waste and to improve recyclability."

"We're also looking at how we can empower social causes with our events, and we see plenty of examples of that taking place in our Royal Parks Half Marathon. We look at how we can mitigate carbon emissions on an annual basis, and work with people who have the experience and the competency to continuously improve how these events will be delivered in the future."

THE ROYAL PARKS: AT A GLANCE

Many of The Royal Parks are located close to royal palaces, with Buckingham Palace sitting next to St James's Park, Kensington Palace in Kensington Gardens and Hampton Court Palace bordering Bushy Park. Several of them trace their origins back to Henry VIII, who rode and hunted in Greenwich Park and Richmond Park – both of which were close to royal palaces at the time. He also commandeered the land that now makes up Hyde Park, Kensington Gardens and The Regent's Park, turning it into a vast hunting park.

- Nearly half The Royal Parks' 5,000 acres are grassland
- More than 7,000 wildlife species live in the parks – including six pelicans in St James's Park
- The parks are home to more than 170,000 trees
- 14 playgrounds offer children the space to explore and discover nature
- Recreational sports include boating, tennis, swimming, rugby and football. The Hub at The Regent's Park is central London's largest outdoor sports facility
- All parks are Sites of Importance for Nature Conservation, designated through the Mayor's London Plan and borough local plans
- Natural England has designated Richmond Park and Bushy Park Sites of Special Scientific Interest
- Richmond Park is also a National Nature Reserve and Special Area of Conservation
- The parks have a rich cultural heritage, hosting 197 listed buildings and structures.

SHARING EXPERTISE. SHAPING THE CONVERSATION.

JUST PUBLISHED

Restoring India's tiger habitats from lantana's grip

India's invasive lantana plants can be a solution for social equity and climate resilience, rather than just a biological threat, explains Karandeep Arora.

India's battle against *Lantana camara* has become a major environmental challenge, threatening biodiversity, forest resilience and nearly half of the country's tiger habitats. This article explores how the fast-spreading species suppresses native vegetation, increases wildfire risk and disrupts food chains, forcing wildlife closer to human settlements



and intensifying conflict. The plant's toxic and highly flammable nature also undermines long-term climate resilience and carbon sequestration efforts.

However, there is also an emerging opportunity: turning lantana into a resource. Indigenous communities are transforming harvested lantana into furniture, biofuel and internationally recognised conservation art, creating livelihoods while supporting habitat restoration. Arora argues that India must move beyond simple eradication strategies and instead adopt integrated management approaches that use the invasive plant itself to finance ecosystem recovery and protect the country's forests and tigers.

Read the article: bit.ly/India_Lantana

JUST PUBLISHED

Standardisation: unlocking better environmental outcomes



A standardised approach to construction planning documentation could save time, reduce costs and improve environmental outcomes, explains Jonathan Ben-Ami FISEP CEnv.

The article explores how standardisation can create consistent cross-sector frameworks, methodologies and reporting systems to deliver effective, measurable outcomes. It argues that common standards improve transparency, accountability and comparability, enabling organisations, regulators and policymakers to better

assess environmental performance and progress towards sustainability goals.

Ben-Ami highlights the importance of robust environmental data, harmonised reporting and clear metrics in areas such as biodiversity, natural capital and climate action. Standardisation is presented not as a barrier to innovation, but as a tool that can support collaboration, improve confidence in decision-making and scale best practice.

The article also emphasises the role of organisations such as ISEP in shaping professional standards and influencing policy development to ensure that environmental ambitions translate into practical, measurable action and long-term positive outcomes.

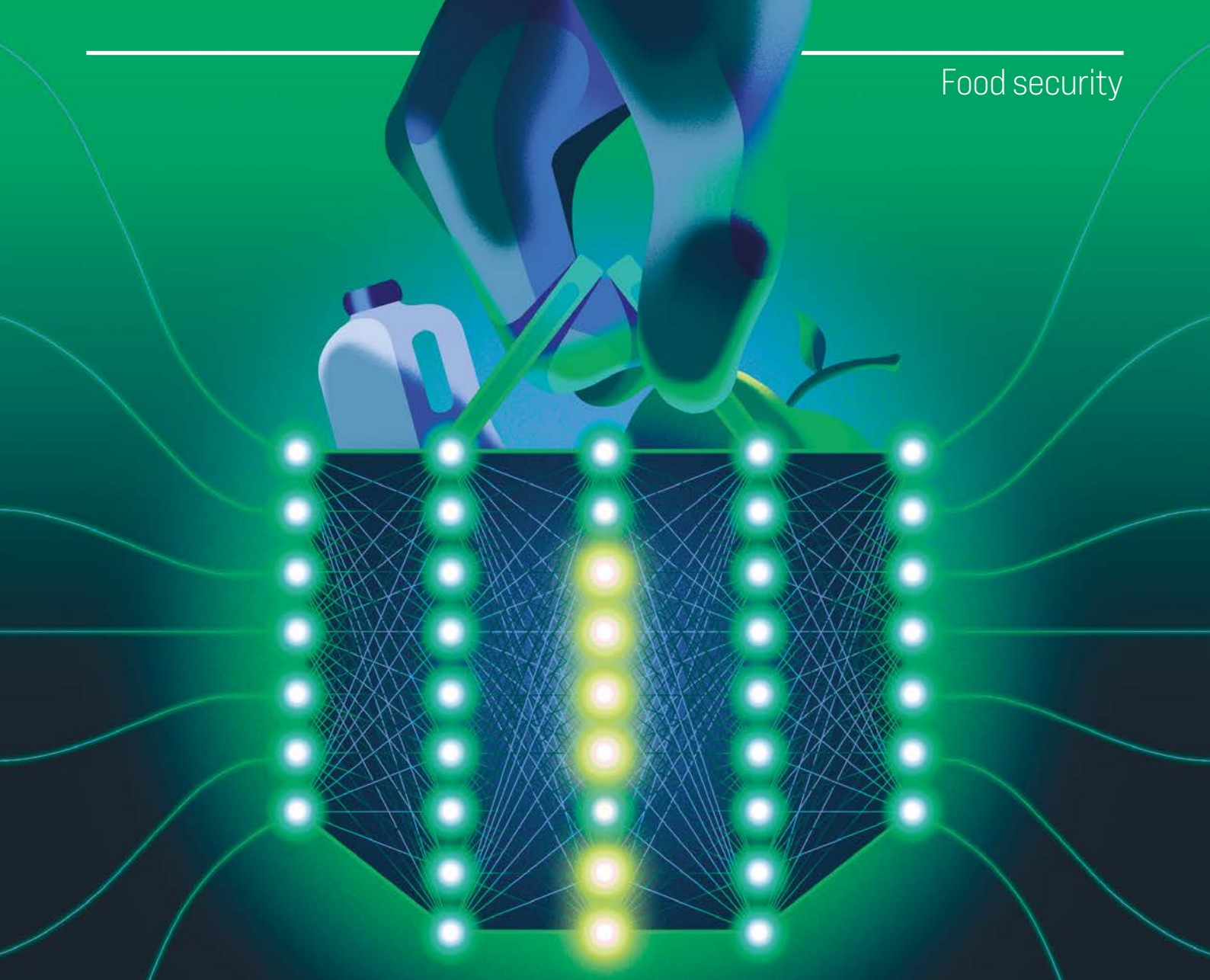
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BITES TO BYTES

Digital transformation is reshaping food production, but weak governance and cyber attacks are exposing critical gaps. **Huw Morris** reports

When the cyber attack landed, the results were crippling. More than 2,000 grocery stores owned by Ahold Delhaize USA were disrupted, leaving shoppers frustrated by empty shelves. The November 2024 attack targeted digital systems, with stores unable to accept

credit and debit cards. The company was forced to take some of its systems offline, hobbling its pharmacy and e-commerce operations. Online orders came to a standstill. Shelves remained empty for several weeks, with limited inventory for fresh fruit and vegetables.

For Andrei Constantinescu, security operations centre (SOC) quality assurance manager at cyber-threat

specialist Smarttech247, such incidents are all too familiar. Artificial intelligence (AI) is being embedded into food and agriculture at a speed that would have sounded unrealistic a few years ago, he says – but comes with dangers.

“Automated inspections, predictive crop analytics, livestock monitoring, supply chain optimisation – it’s all happening quickly, and the efficiency

gains are real,” he acknowledges. “But from a SOC perspective, there is a less glamorous side to this story. “The sector is adopting AI faster than it is governing it, and that creates a security problem that isn’t solved by buying another tool or adding another dashboard. The real issue is visibility, control and accountability. “In food and agriculture, AI risk is not just a technology problem. It’s a governance problem, a supply chain problem and, very often, a people problem.”

It’s also a rising problem. The Food and Agriculture-Information Sharing and Analysis Center, a US-based, industry-led body that provides threat intelligence and advice on cyber security, says the food and agriculture sector was targeted in 5.5% of all ransomware attacks in the first quarter of 2025. It was struck by 84 major incidents, compared with just 40 in the same period of 2024.

Lawmakers across the world have taken note. Under the EU’s AI Act, food and agriculture is classified as a high-risk environment, which means that AI systems are involved with operational decisions, environmental data and consumer safety. Constantinescu points to its broad range of uses, including in automated food-quality inspections, predictive crop analytics, livestock monitoring and supply chain optimisation.

“These are not small pilot projects,” he notes. “They are becoming embedded into production environments, and with that comes the requirement for stronger oversight. Compliance goes deeper than simply adopting AI responsibly. It includes expectations around transparency, safety standards and protection of consumer and environmental data. In other words, organisations cannot treat AI as just another software layer.”

AI is deeply embedded in operational technology, pulling telemetry data from Internet of Things devices, supervisory control and data acquisition systems, and



CYBER ATTACKS AND THE FOOD INDUSTRY

United Natural Foods (2025): major distributor to 30,000+ grocery stores across the US, forced to shut down systems and halt deliveries following a cyber attack, costing between \$350-\$400m in lost sales. **JBS S.A. (2021):** the world’s largest meat producer suffered a ransomware attack that affected the company’s operations in North America and Australia. It was forced to pay \$11m to Russian hacker group REvil. **Marks & Spencer (2025):** a cyber attack forced manual operations, halted online shopping and cost an estimated £300m. **Co-op (2025):** a cyber attack triggered shortages, payment failures and data loss, costing at least £206m in lost revenue.

production nodes. That data is mapped to identify patterns and predict outcomes based on yield quality or efficiency. “But the side effect is obvious: when AI becomes part of production, the attack surface expands rapidly,” says Constantinescu. “This is not an office environment, where the worst-case scenario is a compromised email account. In food and agriculture, AI is

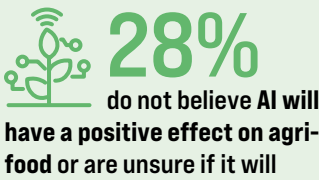
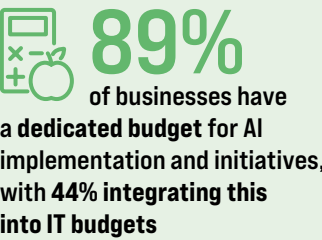
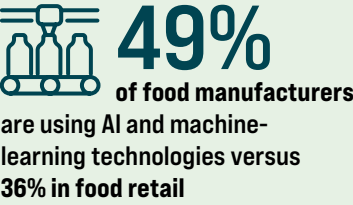
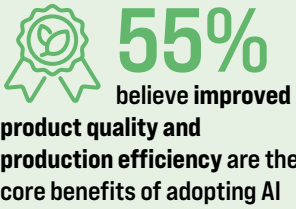
“A system that generates more alerts but has fewer people to act on them is not a safer system – it just looks like one

” tied into operational workflows, supply chains and physical production. That raises the stakes.” Then there are the blind spots in third-party supply chains. Constantinescu knows of one major food company with on-site servers owned by vendors that it had no idea existed. When those servers were turned on, ransomware was present. “This is where AI-driven behavioural analytics became critical,” he says. “Machine-learning rules were capable of detecting suspicious activity through traffic logs, flagging that something bad was happening even before the full picture was clear. Deeper investigation suggested ransomware propagation, and it turned out to be WannaCry – an old ransomware, but still present.

“The uncomfortable lesson is simple. Visibility gaps are still one of the biggest threats in the sector. AI cannot secure what you don’t know exists, but it can help reveal abnormal behaviour faster than traditional monitoring alone.” Mohammed F Alzuhair, a doctoral candidate in business administration at Durham University who has researched AI and the food industry, says “everyone who argues for AI in food systems makes the same move: more data means better oversight”. It sounds logical, he warns, but there is a problem inside that assumption – and the UK is particularly vulnerable. “The human layer of food oversight in this country is already stretched well beyond what most people realise. Food standards staffing in English local authorities fell by around 45% between 2012 and 2018 – not a small dip, with nearly half the workforce gone. “The Food Standards Agency’s (FSA) board was still acknowledging inspection backlogs and workforce constraints as recently as December 2025. Roughly half of everything we eat in the UK comes from abroad, which means the regulatory challenge has always been bigger than local enforcement was ever designed to handle. “Into this walks AI, promising to generate more signals, more alerts, more data. But

HOW THE UK FOOD INDUSTRY IS INTEGRATING AI

AI’s integration into the UK food industry is at a crossroads, according to research by Foods Connected, a Northern Ireland-based software company specialising in food supply chain management. Based on a survey of 500 businesses, it found:



research on decision-making under stress is quite clear: beyond a certain point, more information does not help. It overwhelms. “In high-pressure situations it functions less like insight and more like noise. We already see this in healthcare and cybersecurity, where alert fatigue – staff becoming desensitised to warnings because there are simply too many of them – is one of the leading causes of system failure. Food is no different.” Alzuhair points to FSA figures revealing that as recently as March 2023, more than 500 high-risk food establishments had still to be inspected. “That is the enforcement layer AI is feeding into,” he says. “A system that generates more alerts but has fewer people to act on them is not a safer system – it just looks like one. The dashboard is green. The system appears monitored. But somewhere between the algorithm and the inspector, the accountability has quietly disappeared.” Alzuhair calls this the “digital ghost” – the layer of algorithms and automated systems that manage digital authorisations in supply chains. So, what does a resilient food system look like? He argues that the goal is not to avoid technology but to govern it effectively. Three aspects are important: “First, human control in practice. Staff should be trained to intervene if needed, and drills should be conducted, similar to how banks and other critical infrastructure are stress-tested. “Second, explainability. Algorithms affecting food allocation should be auditable so decisions can be understood and checked. “Third, data sovereignty. Farmers and communities generate much of the data powering these systems, and they should retain meaningful control over how their data is used. “The digital ghost is already part of current systems. The question is whether governance and oversight match the role these digital authorisations now play.”

Stronger together

Jana Kovandzic Pataky explores how collective action is turning sustainability into a source of resilience and long-term value for telecom operators

Sustainability faces conflicting headwinds across the globe. The current US administration continues to dismantle environmental regulations while the EU pushes ahead with its due diligence obligations – despite the recent Omnibus simplification – and China cements itself as an international leader in the green transition. Regardless of political turmoil, sustainability still makes good business sense. Yet a key question remains: how can companies ensure business resilience when they are so heavily dependent on global supply chains?

Telecommunication companies sit at the top of vast and highly interconnected information and communications technology (ICT) supply chains. In many cases, the suppliers providing key technologies and equipment are global firms whose operations span multiple sectors and tiers. This complexity can limit individual operators' ability to influence upstream sustainability practices, highlighting the need for shared engagement frameworks that support suppliers' sustainability efforts, where appropriate.

However, operators are not excused from responsibility for environmental

and human rights due diligence. Alignment with legislative requirements – such as the Corporate Sustainability Reporting Directive or the Corporate Sustainability Due Diligence Directive – remains essential. A closer look at the environmental commitments already made across the sector shows that the telecommunications industry is both ambitious and committed to environmental transparency: most companies have bold decarbonisation targets that are aligned with the Paris Agreement.

However, the largest part of a typical telecom operator's carbon footprint falls under scope 3 – emissions generated through the value chain. These include purchased goods and services such as mobile phones, capital goods like network infrastructure, and emissions associated with the use of sold products. To meet net-zero commitments, companies must address impacts beyond their own operations – particularly in large, globalised ICT supply chains. Individual operators can have limited visibility and influence over upstream sustainability practices. In this context, collaboration across or within industries can establish shared reference points, improve transparency and engage suppliers more effectively.

Recognising this, telecom operators established the Joint Alliance for Corporate Social Responsibility (JAC) in 2010 – a global not-for-profit initiative designed to strengthen sustainability and human rights due diligence across ICT supply chains.

JAC was formed to offer a collective audit programme and protect workers' rights. Its 32 telecom operators cover most of the global telecommunication procurement spend. This collaboration has proved fertile ground for sustainability initiatives, including common supplier risk assessments, product circularity and supplier engagement at scale. Governed by an elected board, all decisions are made through a general assembly via majority vote. Operative work is managed by specialised work groups on topics such as climate change, circularity and due diligence.

Jana Kovandzic Pataky MISEP is a member of the JAC Board and the steering group for ISEP Europe



across shared suppliers, creating concrete change on the ground. Second, it brings consistency by aligning methodologies and expectations to remove unnecessary complexity for suppliers, and allows for greater focus on execution. Third, it shifts environmental, social and governance (ESG) from compliance exercise to value driver. When collaboration works properly, it reduces audit fatigue, improves data quality and strengthens supplier performance, leading to more resilient, efficient supply chains and long-term value creation.

Q How is JAC supporting sector transformation and decarbonisation?

JAC is tackling the hardest part of decarbonisation: supplier emissions. We are engaging more than 700 suppliers that represent the majority of emissions in the telecommunications value chain. But this is not just about scale – what matters is the structure behind it. Our maturity models give a clear view of where suppliers stand and support them in building the capabilities needed to progress and align with net zero.

We see tangible outcomes. Suppliers are assessing carbon footprints, putting concrete-reduction plans in place and, in some cases, already delivering measurable product-level reductions.

“When collaboration works properly, it reduces audit fatigue, improves data quality and strengthens supplier performance”

The real difference that JAC offers is translating ambitious targets and commitments into operational change within supplier organisations, where decarbonisation ultimately happens.

Q What are the next steps for ICT supply chain transformation?

Current industry and company programmes are still built around audits, snapshots and periodic checks. This has value but is no longer enough. Our direction is much more dynamic, with continuous visibility, better data and a clearer understanding of where impacts and risks sit across the value chain. It requires a system where due diligence

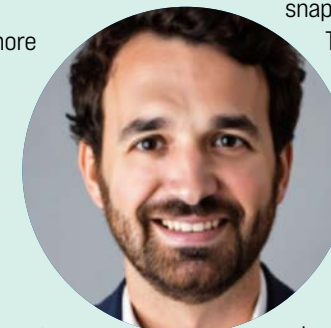
is not a one-off exercise but embedded in day-to-day operations – moving away from reacting to issues to actively managing performance over time.

We need to be honest about where corporate decisions on ESG issues are going. It reaches far beyond compliance or reporting. Successful companies will be those that use sustainability to strengthen their supply chains – making them more resilient, efficient and competitive.

Q What is your vision for JAC and for ICT supply chains?

JAC's role is to enable this transformation at scale. No single operator can influence global ICT supply chains alone, but together we can create alignment and consistency that actually drives change with suppliers.

We remain disciplined about how we do that. Maintaining independence, staying within clear competition boundaries – but at the same time expanding our collaboration with partners, aligning with global standards, and improving how data and systems connect across the ecosystem. The ambition is to shift the fragmented supply chain to a systems-based one that is lower carbon, more circular and fundamentally more responsible by design.



Q&A

Jana Kovandzic Pataky spoke with Dr Carlo Manuel Drauth (inset), Joint Alliance for Corporate Social Responsibility (JAC) Board chair, to explore why industry collaboration is becoming essential to tackling supply chain sustainability and scaling meaningful impact.

Q Why is JAC so important?

No company can decarbonise or safeguard human rights in global supply chains on its own. The most relevant sustainability challenges sit deep within shared value chains and are, by definition, systemic. That is why JAC exists.

Collaboration of this kind enables outcomes that individual companies cannot achieve at scale. First, it drives real impact rather than fragmented effort. In 2025, JAC delivered more than 150 audits and close to 800 corrective action plans

FIGHTING WAR to FIGHTING FIRE

David Burrows examines Spain's decision to fund disaster response through military spending. Will the UK and others follow as climate risks intensify?

“We are going to expand our fleet of rescue and logistical support helicopters, we will buy new bridge-launching vehicles [and] airtankers to help extinguish fires,” said Spanish prime minister Pedro Sánchez this time last year. “The climate emergency is a reality that, far from weakening, is getting worse year after year, so it’s important that our armed forces have the tools to face it.”

While Spain is not the only European country to have approved more spending on defence and climate – Germany is another – it was the first to explicitly direct such a sizeable portion of its new military expenditure towards climate resilience programmes. As *Bloomberg* reported, 17% of the year’s €23bn (£20bn) military spending would go towards natural disaster relief.

The decision helps to legitimise the use of defence spending in response to more frequent and visible climate shocks, professor Basil Germond, chair in international security at Lancaster University, tells *Transform*. As such, it is “less a novelty in operational military practice than a novelty in budgetary signalling,” he adds. “Spain’s move matters

because it makes an implicit practice explicit, and because it is politically legible at a time of rapid growth in defence spending under extremely volatile geopolitics.”

Indeed, during non-military crises, armed forces across Europe and beyond have long been used for disaster relief operations and to support civilian authorities, although rarely with a clearly stated proportional budgetary allocation. Spain has formalised what climate-security research increasingly documents as a rising operational tempo of domestic deployments. In other words, the significance lies not only in the actual investment but in the way it tests the boundary of what politicians can plausibly call ‘defence’ in an era of expanding security agendas, Germond explains.

So, with conflict intensifying in the Middle East, will others follow Spain’s lead?

The US and Israel’s attack on Iran has certainly exposed the UK’s lack of military readiness and shortage of defence assets. Donald Trump’s recent “you don’t even have a navy” jibe was unfair, but hit home, reported the *Financial Times*, as the UK risks

losing cutting-edge defence technology amid delays in publishing the government’s 10-year defence investment plan.

Years of under-investment have not helped matters. Last year, the UK government committed to increasing spending on defence to 2.6% of GDP by 2027 “to keep the British people safe and secure for generations to come”. The world has been reshaped by global instability, including Russian aggression in Ukraine, rising threats from malign actors, rapid technological change and the accelerating impacts of climate change, prime minister Sir Keir Starmer explained at the time.

How much will be dedicated to the climate emergency is not yet clear. The government’s narrative suggests that increased military spending will enhance national security and stimulate economic growth, according to Karen Bell, professor of social and environmental justice at the University of Glasgow. “However, this perspective neglects the immediate threats facing UK citizens: underfunded public services, a strained National Health Service and the escalating climate crisis,” she says. “Redirecting substantial funds to military projects, such as nuclear submarines and warheads, is likely to divert resources from essential sectors that directly affect citizens’ daily lives.”

Middle East conflict has brought food security front and centre again (as was the case when Russia invaded Ukraine). Fuel costs have risen and fertiliser flows have dried up, which has left farmers (and our continued reliance on chemical inputs) exposed. As Tim Lang, emeritus professor of food policy at the Centre for Food Policy, City St George’s, University of London, noted in *The Guardian* in April: “My report for the National Preparedness Commission, *Just in Case*, summarised why we should be diversifying supplies, growing more of our own food, coming off the oil-based farming treadmill and engaging the public in protecting itself for coming shocks. Now it emerges that defence analysts have been urging action too.”

Joining the dots

A high-profile, if short, national security assessment by intelligence experts across government summarised the risks that the UK faces from global biodiversity loss and ecosystem collapse. It does not make pretty reading, but it is extremely important. In a blog for the think-tank Green Alliance, its senior fellow Ruth Chambers – who pushed for the assessment’s release under a freedom of information request – said that “the report’s framing is as significant as its content, as it treats ecological breakdown as a direct and escalating threat to national and international stability. It joins the dots between nature loss, security and society’s wellbeing.”

The UK is not adequately addressing these risks, as peers noted in a debate

“It is less a novelty in operational military practice than a novelty in budgetary signalling

about the government’s reaction to the report’s findings. Concerns were raised about flooding’s impacts on crops both here and in places such as Spain (40% of our food is imported), and the need to invest in defence to protect the flow of food if there is a third world war.

In a paper published in the journal *Sustainability* in January, 39 food system experts from the University of York, Anglia Ruskin University and other institutions mapped how food system shocks, such as sudden price hikes or food shortages, could intensify pressure on already vulnerable parts of the system – increasing strain, instability and the risk of social unrest. It likened the current system to a “tinderbox”.

The warnings have been there for some time but are intensifying as the

world changes environmentally, socially and politically. Whether the UK government reacts quickly enough or with future resilience in mind is moot. In its 2023 report *Climate Change Dilemmas for UK Defence and Security*, RAND Europe highlighted that the effects of climate change are expected to increase the frequency and scope of threats to the UK and its overseas territories; in turn, demand for humanitarian assistance and disaster relief and military aid to the civil authorities “will likely grow, exerting a growing strain on defence”.

Spain’s decision acknowledges this reality and the growing risks of climate change. As Erin Sikorsky, director of the Center for Climate and Security, puts it: “In an ideal world, the investment the EU makes to rebuild and boost its military capacity also boosts its capacity to respond to domestic climate hazards. Countries will face both threats – they’re not mutually exclusive.”

Indeed, some of the new large trucks, helicopters and heavy machinery being built for wars could be used for climate disaster relief during ‘offtime’. Spain’s emphasis on dedicated disaster-response capabilities also shows the growing appeal of dual-use assets that can be used for both warfighting and civil protection or disaster relief, notes Germond.

The peers’ debate in the UK suggested that new frigates could help to protect food flows during conflicts and disasters. “Other countries are finding that climate change and nature loss are harming national security and putting extra demands on their militaries, at the same time as destabilising geopolitics is placing extra demands,” says professor Tim Lenton, founding director of the Global Systems Institute at the University of Exeter. “Spain is interesting because they have resisted Trump’s demands to increase their NATO contribution, although they are increasing their military spending. It’s good to see them prioritising dealing with climate disasters.”

David Burrows is a freelance journalist and researcher



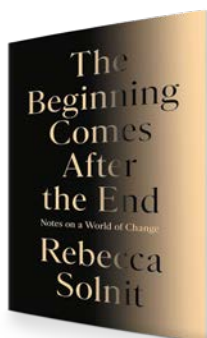
The reading room

Fresh insights. Sustainable thinking

THE BEGINNING COMES AFTER THE END: NOTES ON A WORLD OF CHANGE

Rebecca Solnit

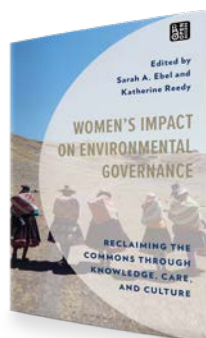
Tracing 50 years of transformative ideas and rights, which have profoundly changed our world, Solnit reveals a quiet revolution reshaping how we live with each other and the planet. Blending years of activism, history and moral imagination, this book offers a unique perspective on our politics and our humanity and is a bracing reminder that collective change begins with us.



WOMEN'S IMPACT ON ENVIRONMENTAL GOVERNANCE: RECLAIMING THE COMMONS THROUGH KNOWLEDGE, CARE, AND CULTURE

Edited by Sarah Ebel and Katherine Reedy

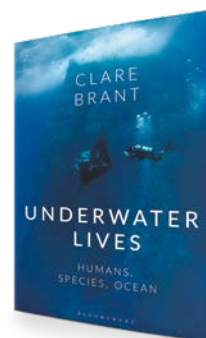
This open-access volume of case studies reveals how women reclaim commons amid global change. From Bangladesh to Chile, it shows women reshaping governance and sustaining economies, environments and cultures – and calls for their labour to be fully recognised.



UNDERWATER LIVES: HUMANS, SPECIES, OCEAN

Clare Brant

With alarm bells ringing about the sustainability of humans' interaction with oceans, and drawing on a century of divers' memoirs, underwater photography and species biographies, this book explores how humans come to know the ocean from within. Immersive writing reveals changing ethics, fragile interdependence and urgent responses to Anthropocene damage in a threatened marine world.

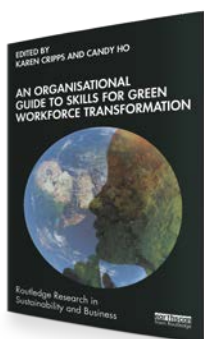


ONES TO WATCH OUT FOR...

AN ORGANISATIONAL GUIDE TO SKILLS FOR GREEN WORKFORCE TRANSFORMATION

Edited by Karen Cripps and Candy Ho

This book explores how organisations can address climate, decarbonisation, biodiversity and social equity challenges through strategic workforce development. It argues that delivering a successful green transition requires every employee – not just technical specialists – to contribute through broader transferable skills.



THE SUSTAINABILITY OF SCIENCE: HOW SCIENCE IMPACTS THE ENVIRONMENT, AND WHAT CAN BE DONE

Scientific research is vital in solving the climate crisis, yet its own footprint is vast. This practical handbook shows how laboratories, facilities and research leaders can cut emissions – via everything from energy use to plastics – without slowing discovery, offering clear, achievable pathways to sustainable science.



WILD, UNFELT WORLD

A luminous collection of eco-poetry that reconnects body, spirit and land. Exploring conservation, spirituality, neurodivergence and a deep love for the environment, each poem serves as not only a meditative reflection but also a rallying cry to celebrate our ecosystems and confront the urgent need to protect them. Through attentive observation and care, Gonzalez invites readers to listen deeply, celebrate fragile ecosystems and find their place in the living world.



It's been more than 50 years since the German-born British economist Ernst Schumacher first coined the phrase 'natural capital' to highlight the value of nature, with assets including our forests, fisheries, rivers, peatlands and farmlands, as well as biodiversity, microorganisms, soils and minerals.

Since then, numerous reports and studies have highlighted the critical ecosystem services provided by natural capital, showing how it underpins economic prosperity and human wellbeing. In 2021, the Dasgupta Review called on governments to measure "inclusive wealth" – produced, human and natural capital – when determining economic success, describing nature as "our most precious asset".

Indeed, the Office for National Statistics values UK ecosystem services at £1.8trn, equivalent to 72% of GDP, while the Green Finance Institute estimates that

environmental deterioration could cut economic growth by 6%-12% by the 2030s.

However, despite evidence for the value of natural capital, MPs, environmental groups and industry membership bodies have accused ministers of adopting a "lazy narrative" in recent years that portrays nature as a "blocker" or "inconvenience" to economic growth.

"It seems like the conversation has taken a bit of a backward step, with some politicians characterising environmental protections as a blocker to development or a hindrance to economic growth, and that really flies in the face of the evidence that's been produced over the past 10 years," explains Jonathan Nichols, senior associate director of natural capital at consultancy firm Jacobs.

"The government's own evidence, which has been developed using taxpayer money, has clearly demonstrated

that nature is absolutely crucial to economic prosperity and resilience."

Changing the narrative

Around 18 months ago, ISEP's Biodiversity and Natural Capital Steering Group, of which Nichols is a member, began working on new policy guidance for the government to better incorporate the value of nature into decision-making.

This year, after consulting with a range of infrastructure organisations – including Network Rail, SSEN Distribution and National Highways – the group produced a report with six key recommendations, chief of which is for the government to "formally recognise natural capital as critical national infrastructure (CNI)".

"The recent UK national security assessment on global biodiversity loss concludes that global and ecosystem degradation and collapse threaten

Redefining nature

There is growing momentum behind calls for the UK government to formally recognise natural capital as critical national infrastructure. **Chris Seekings** reports



security and prosperity, with every critical ecosystem on a pathway to collapse,” says ISEP policy and engagement lead and paper co-author Lesley Wilson. “We must take nature, biodiversity and natural capital much more seriously.”

There are 13 CNI sectors currently recognised in the UK, including energy, water and health. These are defined as the “critical elements of infrastructure”, where loss or compromise could result in a “major detrimental impact” on the delivery of essential services and have a “significant impact on national security, national defence, or the functioning of the state”. These sectors benefit from heightened regulatory scrutiny, mandated security standards, specialised government support and proactive protection strategies.

“If we consider natural capital as critical infrastructure, then it becomes part of government decision-making, budgeting and spending, as well as risk and economic strategies,” Nichols says. “It is not a silver bullet that will solve everything, but it will put nature on par with the other sectors for investment and development so it is taken as seriously as energy security, pipelines and undersea cables, for example – because it’s just as important.

“We’re not going to have a thriving economy if we don’t have a healthy network of natural assets that are functioning and providing key ecosystem services that protect our businesses and health.”

Elevating the issue

The National Infrastructure and Service Transformation Authority (NISTA), launched in April last year, is responsible for overseeing the strategic planning, delivery and improvement of CNI to drive economic growth. Formally recognising an additional sector does not require new legislation, but a NISTA spokesperson tells me that “such designations do not happen often”, adding: “the most recent was government designating data centres and cloud infrastructure in 2024; before that, space and defence in 2015.”



Crucially, ISEP’s paper does not recommend that natural capital be designated as a separate CNI sector in its own right – rather that it be recognised as underpinning and complementary to all existing CNI sectors by their responsible bodies.

“If we were planning to build a data centre in an area that might impact a highway or overload the grid, we probably wouldn’t do that, whereas with nature, the conversation is often framed around bats or newts getting in the way,” Wilson explains. “Nature is sometimes seen as expendable when, actually, it is intrinsically linked to economic growth. The conversation should be around how we can both deliver new developments and enhance nature without making unwise sacrifices that undermine the resilience benefits functioning ecosystems provide.”

The UK government’s 10-Year Infrastructure Strategy, published last year, includes principles for the design of new developments, such as the incorporation of nature-based solutions, with ‘grey’ solutions only deployed when greener

options are not viable. Meanwhile, Defra is undertaking work to quantify the economic value of natural capital and incorporate this into government policy. However, CNI recognition could take this to the next level and mainstream natural capital so it is embedded into decision-making.

“There are certain sectors that have adopted a natural capital approach, such as the water sector, but there isn’t a consistent approach across sectors, and there is no evidence that it is informing the government’s own spending priorities,” Nichols says.

“The Environmental Audit Committee last year recommended that a natural capital approach to decision-making should be adopted more broadly but, unfortunately, most of the government’s response was about nature markets, outsourcing it as a private-sector issue. Yes, we need to develop nature markets – they are very important – but we also need to embed natural capital into government decision-making, which is what we are trying to address through our policy recommendations.”

A national nature project

Another recommendation in ISEP’s paper is for the formation of a Strategic Nature Network (SNN), and for it to be designated as a nationally significant infrastructure project (NSIP). This would involve creating a kind of ‘National Grid for nature’, with high-value, joined-up nature hotspots and bottlenecks prioritised for investment.

“A good parallel that’s often used is the National Cycle Network for cycling routes, and this would be the same thing for nature, providing the ecological connectivity that we need,” Nichols says. “After classifying natural capital as CNI, the SNN gives us the tangible, on-the-ground product to build and invest in.

“Just like a big new road or railway line, it will need not only technical, environmental expertise but also communications expertise, programme management, asset management – all of the different capabilities and resources that are needed for any other NSIP.”

Local nature recovery strategies are already being created across different regions of England, “but they are too

granular to represent strategic priorities at the top-down national level,” Wilson says, adding that “an SNN would allow for the mapping and connection of strategically important areas of nature across the UK”.

An SNN is already being mapped out, led by the Rebuilding Nature Alliance. This is a body made up of private sector and regulated businesses, including major infrastructure organisations across many CNI sectors, some of which contributed to ISEP’s paper and developed the recommendations.

The ISEP report suggests that a dedicated Natural Infrastructure Investment Fund for nature restoration projects to connect the SNN should also be established. This would create early-stage investment and provide private-sector confidence and targets for critical locations, with the SNN being recognised

“Removing environmental protections is not going to deliver growth but will undermine it instead”

in national policy statements and spatial development strategies, it said.

“People have spoken about an SNN and classifying natural capital as critical infrastructure before, but until our paper, no one had done the work to review the definitions, collate the evidence and set out the logic,” says Nichols. “Our recommendations also contribute to the discourse by posing the ‘what next?’. If we recognise that natural capital is critical infrastructure, what should we do about it?”

Our most critical asset

He says it’s “surprising” that some policymakers still fail to recognise the

inextricable link between economic growth and nature protection and enhancement, given the government’s own evidence.

When we think of critical infrastructure, we tend to imagine the digital and communication networks or healthcare systems that keep the economy and society running – but we often forget that natural assets underpin every one of them.

Wilson says: “We enjoy the shade that nature provides on a sunny day, or the protection against floods during heavy rainfall, but it’s only when that disappears and rain runs straight down our hills and flood our homes because the trees have gone, for example, that we notice how valuable our natural assets are – we take it for granted.”

And it’s not only about the negative effects of what we might lose. Studies indicate that nature restoration projects return around £3 of value for every £1 invested, with benefits stemming from job creation, health improvements, carbon storage and numerous other ecosystem services. There are huge economic and social gains to be had from investing in nature.

“If we’re chasing economic growth by investing in things that erode our natural ecosystems and planetary support system, that’s going to lead to economic losses far in excess of that growth,” Nichols says. “Our paper is focused on supporting the government’s economic agenda, not hindering it. The paper reminds policymakers that simply removing environmental protections is not going to deliver growth but will undermine it instead. Recognising natural capital as CNI, embedding natural capital in decision-making, and investing in our natural infrastructure will build a more resilient economy and society.”

ISEP’s paper *Natural Capital is Critical Infrastructure*, by Jonathan Nichols MISEP CEnv, Lesley Wilson and Oliver Seville, can be downloaded at bit.ly/NatCapInfra

A tale of three cities

Why do some cities become cycling powerhouses while others stall? **Rick Gould** reports

Visit Copenhagen, Amsterdam or Utrecht and it is clear that cycling is normalised, with extensive cycling infrastructure such as segregated cycleways and abundant bicycle parking. Copenhagen has the most segregated cycleways, with 52km for every 100km of road; cycling around the city is so safe and quick that well over 60% of residents cycle to work or school, while its modal share for all journeys is at least 30%.

While not a cycling city on the same scale, London is becoming one. By the end of 2025, 1.5 million journeys a day were taking place by bicycle, up more than 40% in five years thanks to an expanding cycling network, safer streets and bicycle parking. During rush hour, around 20% of vehicles crossing some Thames bridges are bicycles. However, bicycle use only averages 5%.

About 100km north, Milton Keynes has the same proportion of cycleways as Utrecht, but cars still dominate journeys and the modal share for cycling is just 3%. Moreover, Copenhagen was dominated by traffic when Milton Keynes was a new town developed with cycling infrastructure – so which factors make a city transform, even if it has the necessary infrastructure?

Infrastructure is not everything

“Infrastructure is the most important element, but not the only one,” says Adam

Coffman, project manager for the UK’s All Party Parliamentary Group for Cycling and Walking (APPGCW). “There needs to be the political will and strong leadership to enable cycling. You can have all the money needed for infrastructure, but without the political will and leadership, nothing will happen.”

The APPGCW is a cross-party group of parliamentarians that works with other politicians to promote active transport and influence the government on walking and cycling policies.

“Active travel is not universally seen as important,” says Coffman. “In London, some boroughs are pro-cycling and others aren’t, so implementation is patchy. It is really about political will.” During his 18 years at the APPGCW, he has seen London transform, witnessing what determines whether a city becomes a Copenhagen or a Milton Keynes. So what factors are important? Understanding them requires a detailed analysis.

Characterising a cycling city

There is no official definition of a ‘cycling city’, but the most widely used system for characterising them is the Copenhagenize Index, by planning consultancy Copenhagenize.

THE PILLARS AND INDICATORS OF THE COPENHAGENIZE INDEX

Pillar	Indicators
Safe and connected infrastructure	● Bicycle infrastructures ● Bicycle parking areas ● Traffic calming ● Safety measures
Usage and reach	● Bicycle modal share ● Modal share growth ● Women’s share of bicycle trips ● Bicycle sharing and renting systems ● Use of cargo bikes
Policy and support	● Political commitment ● Advocacy ● Image of the bicycle ● Urban planning

Originating in Denmark’s capital but now headquartered in Paris, it is backed by the European Institute of Innovation and Technology’s Urban Mobility programme.

“As an urban planner, I am fascinated by how bicycles can be used as a tool to completely transform cities and towns,” says Clotilde Imbert, Copenhagenize director since 2021. “It’s a tool not only related to mobility, but impacting health, local economy, environment, quality of life.”

Imbert studied urban planning in Paris and Copenhagen, joining Copenhagenize after working as an urban project manager. “Copenhagen is a city that can inspire others,” she says. “The city administration is very good at urban design, from the micro to the macro level. This model can be exported and adapted to other contexts.”

Copenhagenize’s assessment tools, metrics and training courses have enabled

many municipalities to become cycling towns and cities. Its index uses a systematic analysis of three pillars and 13 indicators (*see facing page*), resulting in an overall score from an analysis of 100 cities from 44 countries around the world. The index began in 2011 and is published every two years; its current top five are Utrecht, Copenhagen, Ghent, Amsterdam and Paris.

The top 10 cities have a cycling modal share of at least 25%, and the top 30 all have a bicycle plan or a plan for sustainable urban mobility, as well as a team for cycling policy. Top-placed Utrecht leads the world in safe bicycle parking, with 494 spaces per 1,000 inhabitants, and aims to transform 1% of its car parking spaces into bicycle parking each year. It has 30,000 bicycle parking spaces near the central station and the world’s largest bicycle park, with 12,500 spaces.

While Copenhagen, Utrecht and Amsterdam are well established cycling cities, Ghent and Paris have made significant and rapid progress. Coffman and Imbert each emphasise that political will and strong leadership are crucial in making this happen.

“When developing a cycling city, you need both political will and a public that is willing to respond,” says Imbert. “You need a structured plan and finance, too.”

Coffman, meanwhile, notes that “a cycling town or city needs a strong political leader who is willing to take risks and make difficult decisions”. In simple terms, make it easier to cycle and harder to drive.

Some decisions, such as making room for bicycles at cars’ expense, are controversial. This is evident in Paris, which Anne Hidalgo, mayor from 2014 to 2026, vowed to transform into a top-five cycling city by 2026. Among other actions, she led the creation of hundreds of kilometres of cycle routes and reclaimed car parks for active transport and pedestrians.

Fear can constrain action, too. Imbert observes that some politicians are afraid of losing elections, so resist making contentious decisions. Yet in recent

elections in Paris, Lyon and Montpellier, leadership teams that had made ambitious cycling investments were re-elected. “The mayor of Montpellier invested €150m in cycling, or €33 per person – one of the highest rates in France – despite some opposition related to removing space for cars to dedicate it to cyclists,” says Imbert. The evidence is that voters notice the benefits of cycling cities, and that prioritising cycling wins votes.

“Ghent is also a very inspiring city,” Imbert adds. “The planners saw that about half the traffic in the city was through-traffic, so they made it harder to go across the city by car but easy for active transport.”

Costs and benefits

Cycling in cities, especially combined with other measures such as ultra-low emission zones and boosted public transport, leads to better air quality and human health. Cycling infrastructure is also cheaper than building roads, while Copenhagen, for example, has found that every kilometre of cycleway is directly or indirectly paid off within five years owing to the positive effects.

“A cycling city is also a way to develop a local economy because cyclists spend more money locally,” says Imbert. “They use local bicycle shops more frequently.” For example, cities that foster cycling typically have much higher per-capita numbers of bicycle shops.

A challenge for mature cycling cities is continuity in public engagement; Copenhagen runs surveys to see why people ride bicycles. “People say it is practical and fast,” says Imbert. “A human being is the same everywhere – they want to get to their destination quickly, efficiently and safely.” With the number of cycling cities worldwide growing, whether more will join them is a question of political will.

Rick Gould MISEP CEnv is an environmental scientist and writer

Al's environmental impact – from its water consumption and carbon production to the inevitable rise in e-waste – is drawing an increasing amount of attention.

The situation is exacerbated by booming demand for new technology to meet AI's component and hardware needs, putting pressure on IT manufacturers and leading to data-centre overprovisioning, as well as higher prices for relevant components.

From reducing manufacturing demand and building resilient supply chains to extending the usable lifespan of hardware, a circular IT economy would lessen AI's effect on the environment.

A growing problem

According to a study published by *Nature Computational Science*, generative AI technology could create 1.2 to 5m tonnes of additional e-waste by 2030, taking the total to 82m tonnes. Just 22.3% of e-waste was recycled in 2022, and that figure is expected to fall to 20% by 2030.

At the same time, AI is putting pressure on the other end of the IT lifecycle: procurement. As demand grows, component prices are rising and new equipment lead times are lengthening. A recent survey of 280 data-centre professionals found that 83% don't think supply chains can deliver the advanced cooling technologies required for AI workloads – and this is true for a range of components across the industry.

Furthermore, data centres are expected to consume 70% of the memory chips made available in 2026, causing industry shortages and raising prices as many scramble to meet their IT hardware needs.

Circular strategies

When hardware's lifespan is extended through circular practices (refurbishment, reuse, cascading assets and eventual recycling), manufacturing demand falls.



The e-waste surge

AI's growth is creating waste. **Charlotte Nixon** explains why circular IT is part of the solution

In terms of IT procurement, this means a more resilient supply chain, as many turn to the refurbished market. Additionally, the embedded carbon in existing hardware is already spent; getting another three to five years from a device or component is almost always better for emissions than manufacturing a replacement.

The organisations that will thrive aren't those chasing the new AI trend, but those with diversified supply chains that can adopt circular practices for a diversified market. Businesses could look to adopt a hybrid approach to AI – dealing with small, locally hosted models for some situations, and large language models provided by big companies for others. Exploring alternative supply chains, upgrading existing equipment and building low-cost sandbox systems, meanwhile, would allow companies to determine AI's potential in a more circular manner.

Circularity also reduces the amount of hardware heading to landfill, resulting in less e-waste and more value reclamation from manufactured goods.

Building resilience

Expanding your pool of available resources means looking to the refurbished market for IT procurement. This market is mature and well stocked with leading and capable hardware, which is ready and waiting while lead times for new technology increase.

However, IT circularity can also mean exploring more sustainable IT disposal practices. Selling redundant IT hardware can maximise your overall budget, giving you the freedom to explore different options if your market is stretched thin. Recycling hardware should always be a last resort within the circular IT model, as it marks the end of a product's life.

Circular IT habits not only reduce e-waste, carbon from manufacturing and the mining of virgin materials but also build a resilient supply chain for continued growth.



Charlotte Nixon is content and campaigns manager at Techbuyer Europe

The Airlander 10 combines
aeroplane, airship and
helicopter technologies
(artist's impression)



MOVING WITH THE TIMES

Transport is responsible for more than a fifth of the world's energy-related emissions and is the UK's highest-emitting sector. **Chris Seekings** speaks to three innovative companies that are decarbonising air, sea and road travel

THE QUIET DISRUPTOR

In the past decade, work has been under way to deliver a new aircraft – the longest in the world – that will pave the way for zero-emission flights

Developed by Hybrid Air Vehicles (HAV), the revolutionary Airlander 10 is an over 300-feet-long helium aircraft that combines technologies from aeroplanes, airships and helicopters. It uses a combination of buoyant and aerodynamic lift, and with a passenger capacity of up to 130 and a 10-tonne payload, it is designed for short-haul travel, surveillance and cargo.

"The inspiration for the design comes from the principle that lighter-than-air aircraft are inherently efficient, as the weight of the aircraft is offset by the helium used in the hull," explains Hannah Cunningham, HAV's head of marketing and communications. "Historically, though, airships and other lighter-than-air aircraft have been hard to control on the ground."

"The Airlander design is heavier-than-air, meaning it can be handled on the ground like traditional aircraft. This combination allows us to deliver a robust aircraft with significantly reduced emissions. The prototype was flown between 2016 and 2017, where we collected enormous amounts of flight test data to inform the production design."

Despite the UK's total greenhouse gas emissions having fallen by more than half since the 1990s, the transport sector remains a stubborn outlier, declining by just 12% to 15% during that time. It is the country's highest-emitting sector, responsible for 25% to 30% of the national total, with cars and taxis being the largest source.

The explosion of electric vehicles in recent years has been positive, but

hasn't reversed the long-term upward trend in emissions, while air and sea travel remain just as polluting as ever.

Indeed, aviation and shipping each account for 2% to 3% of global emissions, with the promise of sustainable aviation fuels and calls for regulatory changes not yet having moved the needle because of these industries' reliance on high-energy fossil fuels. Thankfully, innovative companies offer hope for the transport sector as it strives to reach net zero.

With a range of up to 2,000 nautical miles and operating altitude of up to 10,000 feet, the first commercial model is expected by the end of the decade and will run on four kerosene engines. However, Cunningham notes, “even in this configuration, the aircraft will produce up to 90% fewer emissions compared with traditional aircraft on similar routes. The product roadmap will then focus on a zero-emissions aircraft using hydrogen fuel cell-powered electric engines.”

There is huge interest: HAV currently has more

“It has a range of up to 2,000 nautical miles, and an operating altitude of up to 10,000 feet”



than \$2bn (£1.5bn) worth of aircraft reservations across 32 companies in the passenger mobility, eco-tourism and defence markets.

“Once Airlander 10 is with customers, we will be developing larger Airlander variants that will be suited to the logistics and freight market,” says Cunningham. “This is actually the largest market for the aircraft – faster than surface transport, and cheaper and more efficient than air freight.”

The aircraft is designed to be extremely quiet and can land on water, ice, sand, grass and traditional paved areas. Using an innovative landing gear with inflatable amphibious ‘studs’, it eliminates the need for prepared runways or significant infrastructure.

“It reduces the need for traditional airport infrastructure, which will lower land use and associated environmental impacts,” says Cunningham. “It also enables more direct point-to-point operations, helping to reduce overall fuel burn and emissions from onward road or air transfers.”

The Airlander 10’s versatility and sustainability credentials could see it used by a wide range of sectors in the near future. Cunningham adds: “We are very excited at the prospect of Airlander becoming commonplace in our skies as aircraft roll off the production line.”



Ammonia-fuelled shipping vessel the *Green Pioneer*

A NEW HOPE

Last year, the UK welcomed the world’s first dual-fuelled ammonia-powered vessel to its shores, marking several years of research and development – and proving naysayers wrong

Developed by Australian metal mining company Fortescue, the *Green Pioneer* is on a tour that has taken it to Europe, the US, the Caribbean and Central and Latin America, showing that ammonia – a zero-carbon fuel – could slash global shipping emissions.

“When I first went to the Maritime and Port Authority of Singapore to tell them we would be burning ammonia on the *Green Pioneer*, they said ‘hell will freeze over before you do that; it’s not allowed by the International Maritime Organization’ (IMO),” explains Fortescue’s head of green shipping and marine systems, Andrew Hoare. “We’re focusing on methanol, biofuels and liquified natural gas (LNG). They said – no way.”

However, the authority went from sceptic to supporter and enabler after visiting the company’s Perth testbed.

Fortescue moves 200m tonnes of iron ore a year from Australia to China – 20% of the country’s iron ore exports – and operates the equivalent of 100 ships to carry it.

“LNG has been touted as the new transition fuel, but it only resolves shipping emissions by about 20%,” says Hoare. “We went to engine manufacturers and asked about using ammonia as a marine fuel, and they said it may be possible in 2035 or 2040. They weren’t interested, so we did it ourselves.”

Ammonia for shipping fuel is primarily produced by combining nitrogen and hydrogen under high pressure and temperature. A zero-carbon fuel, it is ideal for the long-distance and hard-to-abate shipping sector,

“We’re not just miners who dig stuff out of the ground – we deal with complex chemicals, explosives and process safety,”

Hoare says. “For the *Green Pioneer*, you need an ammonia tank and fuel preparation, bunkering, nitrogen, heating and cooling and scrubbing systems. We presented all our learnings to the IMO in 2024, which developed interim guidelines for the use of ammonia as a marine fuel. They were approved by the Sub-Committee on Carriage of Cargoes and Containers in August 2024 and adopted by the Maritime Safety Committee in December that year.”

The IMO’s in-development Net-Zero Framework for shipping will penalise the use of high-emission fuels and reward lower-emission alternatives.

“The *Green Pioneer* is not a commercial ship – it’s a ship that’s driving regulation and a demand for ammonia fuel,” Hoare says. “We decided to go around the world to every port and say ammonia is safe, ammonia is possible.”

Researchers at the Environmental Change Institute in Oxford estimate that green ammonia could decarbonise over 60% of global shipping by 2050 and reduce tank-to-wake emissions by 90% to 95%.

“You’ll see the first commercial vessels in the fourth quarter of this year, and we’re continuing to refine the technology,” Hoare says. “The first Newcastlemax ore carriers will reduce emissions by around 75%, but it’s critical to get it almost up to 100%. That is achievable, and has to be our North Star because we’re going to bust 1.5°C this year, so we have to be accountable and clean up our act.”

GOING OFF-GRID

Paul Stratford began exploring solar power for e-bikes in 2019. After a prototyping period, St Peter’s Hospital in Surrey asked him to research the potential for solar e-bikes in its car park

“We configured a system that would charge up to three bikes simultaneously, powered entirely by solar, so there were no groundworks, no installation costs, and it was very, very cost effective,” he explains.

Emboldened, he founded e-bike charging company Solarcycle. Since the first installations in December 2022, it has grown into what Stratford calls the “leading off-grid, smart network of e-bike chargers globally.”

He adds: “Our chargers are designed by cyclists, for cyclists, with installations in England, Wales, Scotland and Spain, and enquiries in some other European countries, where we will start to expand too.”

The off-grid modular chargers are designed for organisations with large estates, such as NHS Trusts or university campuses, allowing staff to charge bikes at work.

Stratford notes that “travelling to work by e-bike has virtually no travel or fuel costs, and it is fantastic for heart health and a number of other issues like diabetes”. Travel accounts for around 98% of employee emissions, and staff who cycle to work are likely to take 40% fewer sick days.

Solarcycle has provided Surrey County Council with up to 1,380km of carbonless



travel onsite every month, slashing energy costs and reducing car use. A recent NHS installation also demonstrated regular charging sessions and how weather, temperature and topography affected use.

“The minimum cost of just putting in groundworks and cabling for regular mains charging in a bike shelter 10 to 50 feet away from buildings is over £25,000,” Stratford says. “Solarcycle installations have no groundworks, no trench works or planning and are very low cost. Once ordered, they can be delivered and installed in as little as two weeks with an optional lifetime guarantee, and the chargers last 15 to 20 years.”

The Green Mark-accredited company provides demo days for interested organisations,

which generate instant data feedback.

“Immediately after installation, it starts recording every single charging session, so organisations can see how effective it is and how many grams of carbon dioxide and carbon-emitting transport miles they’ve erased from roads, which they can use for their reporting,” says Stratford. “Owning and maintaining an e-bike costs under a tenth of the price of a car. For commuters switching everyday transport to e-bikes, the savings can be as much as £4,000 annually.

“With the cost of living and fuel right now, we are championing and campaigning for greener travel because it’s better for people’s health, wallets and the environment.”

Career profile

Why did you become an environment/sustainability professional?

About 20 years ago, I became increasingly aware of how rapidly environmental work was changing and how climate issues were starting to make headlines. It became obvious that sustainability was going to shape the future. I wanted a career where I could be part of real solutions.

What is your current role and what does it involve?

I work as a consultant helping organisations to set and turn their sustainability goals into real, actionable plans. That means everything from carbon footprinting and strategy development to delivering training and collaborating with clients to make sure their initiatives are meaningful and achievable. No two days are the same, and that's what I love about it.

What's the best part and the most challenging part of your work?

The best part is knowing that I'm making a tangible difference, whether through reducing emissions, improving resource efficiency or supporting conservation initiatives. The most challenging part is driving cultural change within organisations and overcoming resistance to newer, more sustainable ways of operating – but it's so rewarding when clients have the 'lightbulb moment' and realise sustainability is a game changer.

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

Strong communication and stakeholder engagement skills. Problem-solving and adaptability are key, too, because every client has different goals and challenges.

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

I would like to be a Full ISEP member and Chartered Environmentalist, leading a dynamic team of

**Conservationist
Rachel Carson**



STEPHANIE SINGER

**BSc (Hons) Env Health,
AISEP, AdvDip Mgmt,
Dip ESG**, environmental
director, Quadra Limited

sustainability consultants, supporting and making a difference for many more clients across Ireland, Great Britain and beyond. I would like to be delivering impactful strategies and meaningful collaboration to turn bold sustainability goals into action.

What advice would you give to someone entering the profession?

Stay curious and keep learning – the environmental and sustainability sector is constantly evolving. Be persistent and patient; meaningful change often takes time and collaboration.

Describe yourself in three words

Hard-working, ambitious, collaborative.

What motivates you?

The opportunity to create positive, lasting impacts for future generations, including for my own daughters. Even small wins, such as helping a company switch to more sustainable

practices, feel huge when you know it's contributing to a bigger picture.

Greatest risk you have ever taken?

Stepping up to become a partner at Quadra while raising a young family – taking on the responsibility of running projects, guiding a team and shaping the company's direction while juggling family life. It's challenging but incredibly rewarding, and it's taught me a lot about balance, leadership and trusting myself.

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

Rachel Carson – she was way ahead of her time on environmental issues and climate change, and actively worked to make change for the better and raise public awareness. I'd love to have coffee with her and talk about how far the movement has come and how far we still have to go.

Want to raise your profile?

You can share your career journey on our Green Careers Hub – bit.ly/GCHcareer-stories. For details, contact s.maguire@isepglobal.org

“
Problem-solving and adaptability are key
”



Green Careers Hub content spotlight

Want to find out about careers in waste and pollution? We have a couple of job profiles on the Green Careers Hub that might be of interest:

- **Waste manager**
- **Environmental monitoring officer**



Find out about responsibilities, tasks and career routes into these roles at www.greencareershub.com/find-your-green-role/job-profiles

We also have a sector page dedicated to resource management and circular economy.

We would love to feature more job profiles on the Green Careers Hub. Think you could provide one? [Email us at info@greencareershub.com](mailto:info@greencareershub.com).

The Green Careers Hub has a mission to ensure a more sustainable future by providing access to information and opportunities around green skills, jobs and careers.



Looking for your next career move? Or looking to recruit the best talent in the sector?



ISEP Jobs is the official ISEP jobs board, created to support jobseekers and employers in the sustainability sector.



WORKING TOGETHER TO
MAKE ALL JOBS GREENER
ISEPJOBS