



100 BITESIZE
SNIPPETS OF
GREEN NEWS

Recapping a year in green technology
through policy and regulations,
innovation, market trends and pioneers,
challenges, critiques, and future forecasts.

Green Wrap 2024

GREEN

MAGAZINE

WRAP

20

24



Dear readers,

We launched PP Plus because we believe that the green transition is a global necessity, but also a once in a lifetime opportunity for creating economic wealth for the United Kingdom. And we launched at a pivotal moment - a year that accelerated purpose and demanded that the transition be recognised in every walk of life.

This publication is young but has already shared thought-leading narratives, concrete advice and the latest on green technology opinion. In this special edition of Green Machine, we're recapping on the year and the stories that made it a key one.

We explore the evolving world of greentech, where innovation meets sustainability and solutions shape the future. In an era of profound environmental challenges, the UK stands at an inflection point - a global leader in policy, innovation, and green industry, yet grappling with the complexities of transitioning to a net-zero economy.

This magazine offers a unique perspective: 100 concise, impactful snippets that capture the pulse of the UK's greentech landscape. From groundbreaking innovations and inspiring startups to market trends, policy shifts, and the hard truths about the barriers we must overcome, this collection is designed to inform, provoke, and inspire.

Our approach is simple but intentional. In a world inundated with information, we distilled these insights to their essence - bitesized but impactful pieces that tell the story of how the UK is transforming its energy, transportation, and industrial systems to meet the demands of a sustainable future. Together they offer a comprehensive snapshot of what's happening, what's possible, and what's next.

Thank you for joining us on this journey. Let's get straight to it!

Warm regards,

Richard Spears
Editor

GREEN
MACHINE



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Meet Canda the Red Panda at
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Hundreds of services and solutions to help you rise through seed investment to the flourishing market debut of your green technology.



POLICY & REGULATION

Explore key UK government initiatives, laws, and incentives driving the adoption of renewable energy and low-carbon technologies.

Net Zero Strategy

The UK's Net Zero Strategy outlines policies for decarbonising all sectors to achieve net zero by 2050.

Zero Emission Vehicle Mandate

New regulations mandate that all new cars and vans be zero emission by 2035.

Energy Security Bill

Legislation focuses on clean energy independence amid geopolitical tensions.

Local Green Funds

Councils receive funding to support regional decarbonisation.

Carbon Border Tax

The UK introduces a tax on imported goods with high carbon footprints.

Offshore Wind Expansion Zones

Designated zones in the North Sea aim to boost capacity by 2030.

Ban on Gas Boilers

All new home constructions must use low-carbon heating from 2025.

Urban Green Grants

Funding provided to cities for urban rewilding and carbon sequestration.

Blue Economy Strategy

Investment in marine-based renewable energy technologies like tidal turbines.

Solar Mandates

New housing developments must include rooftop solar panels by 2025.

Agricultural Sustainability Grants

Farmers receive financial support for regenerative farming practices.

Eco-Tariffs for Households

Energy companies roll out incentives for customers choosing green tariffs.

Energy Efficiency Standards

A new EPC minimum rating of C for all rental properties by 2028.

EV Mandate

Car manufacturers to ensure a significant percentage of new vehicles are electric by 2030.

Smart Tachographs for HGVs

Heavy Goods Vehicles must be equipped with smart tachographs to improve safety and efficiency.

INNOVATION & TECHNOLOGY

Dive into cutting-edge breakthroughs in renewables, energy storage, carbon capture, and AI transforming the UK's green future.

Battery Breakthrough

UK researchers develop sodium-ion batteries, reducing reliance on lithium.

AI in Energy Grids

National Grid introduces AI to optimise renewable energy distribution.

Hydrogen-Powered Buses

London trials a fleet of hydrogen buses for cleaner public transport.

Direct Air Capture

New pilot facility in Scotland removes CO₂ directly from the atmosphere.

Floating Wind Farms

Advances in floating offshore wind technology expand deployment opportunities.

Electric Aviation

Regional electric flights connect Scottish islands with mainland hubs.

Advanced Recycling Tech

AI-based sorting revolutionises plastic recycling in Manchester.

Grid-Scale Batteries

Mega-battery farms enhance renewable energy storage and stability.

Wave Energy

Cornish coastline becomes a hub for wave energy testing.

Small Modular Reactors

Rolls-Royce leads UK development of compact nuclear plants.

Vertical Farming

Urban indoor farms provide fresh produce with 90% less water usage.

Biodegradable Electronics

UK labs develop sustainable electronic devices for greener tech waste.

Floating Solar Panels

Pilot projects on reservoirs in Yorkshire produce promising results.

Government Allocation

£1.73 million allocated to support innovative green technologies.

Smart Grid Optimisation

AI-powered grids minimise energy wastage in UK cities.

Urban Forest Initiative

Birmingham City Council partners with greentech firms to plant 1 million trees.

Solar Powered Trains

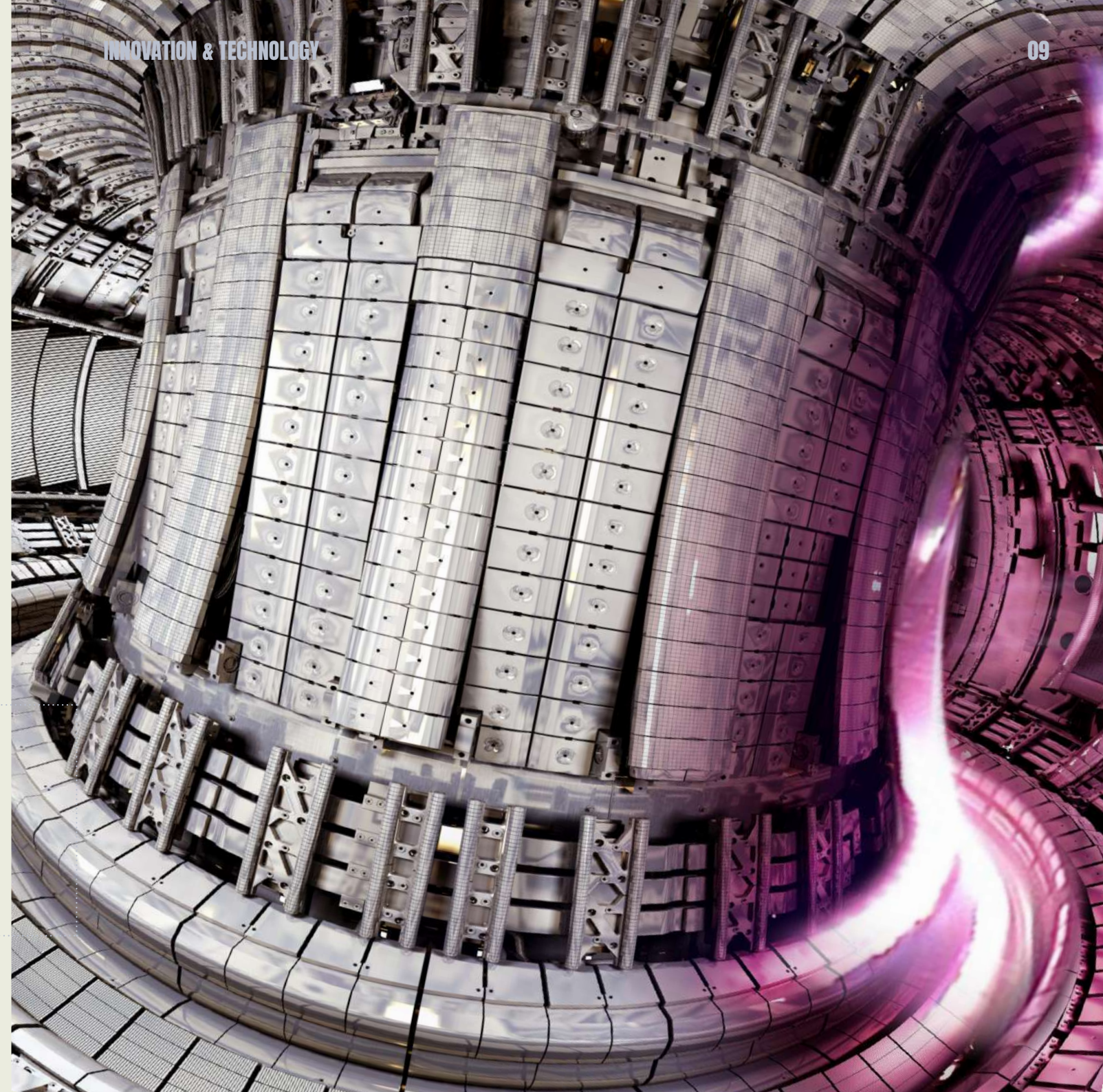
Network Rail deploys solar-powered trains on regional routes.

Energy-Neutral Stores

Tesco trials an energy-neutral store concept in Scotland.

Fusion Power Progress

Nuclear fusion has achieved a groundbreaking milestone, generating more energy than ever in an experiment at the UK-based JET laboratory



MARKET TRENDS

Analyse the latest investment flows, industry growth sectors, and commercial opportunities shaping the UK's greentech landscape.

Green Investment Surge

London attracted \$3.5 billion in climate tech investments, up from \$177 million in 2014.

Corporate Sustainability Reporting

New IASB standards, IFRS S1 and S2, require detailed ESG disclosures from UK companies.

03

Digital Industry Emissions

The digital sector accounts for approximately 4% of global emissions, surpassing aviation.

Sustainable Finance Trends

significant transactions support the energy transition, highlighting renewables and climate tech.

EV Market Share

In November 2024, electric vehicles accounted for 25.1% of the UK's total car market.

Sustainability in Manufacturing

The green transition is seen as a catalyst for reviving the UK's manufacturing sector.

Green Technology Market Growth

The UK's greentech market is projected to reach \$3.36 billion by 2032.

Green Technology Employment

The green technology industry supports over 244,000 workers, with 14,500 new employees added in the last year.

Green Technology Funding

The industry has attracted more than 350 investors, with over 800 funding rounds closed.

Corporate Sustainability Priority

Only 56% of large UK companies prioritise sustainability, the lowest in four years.

STARTUPS & PIONEERS

Meet the UK-based innovators and trailblazers at the forefront of developing transformative, sustainable technologies.

Ripple Energy

Enables individuals and businesses to co-own large-scale wind farms, supplying them with low-cost, green electricity.

Carbon Clean

Develops innovative, cost-effective carbon capture solutions.

BBOXX

Delivers affordable, clean energy solutions to off-grid communities.

Pragmatic Semiconductor

Develops ultra-thin semiconductors for sustainable electronic applications.

Field

Builds and operates battery storage systems for renewable energy optimisation.

Zenobe

Delivers energy storage, fleet electrification, and grid solutions for sustainable energy systems.

Nexeon

Develops advanced silicon anode technology for high-performance lithium-ion batteries.

Gridserve

Revolutionising sustainable energy with solar farms and electric vehicle charging solutions.

Plastic Energy

Transforms end-of-life plastics into sustainable, reusable resources through advanced recycling.

Iceotope

Provides precision liquid cooling solutions for efficient, sustainable data centre operations.

SEaB Energy

Sustainable micro power generation solutions for decentralised energy needs.

Recycleye

AI-powered sorting equipment and analytics for waste management.

Positive Carbon

Reducing food waste through technological solutions, in the food industry.

Wayve

AI-powered self-driving vehicle technology, revolutionising transportation sustainability.

Techrete

Innovates in green construction materials, contributing to sustainable building practices.

SUSTAINABILITY IN ACTION

Discover inspiring case studies of greentech projects successfully delivering sustainability and reducing emissions across industries and communities.

05

Electric Vehicle Adoption

The UK sees a significant increase in electric vehicle registrations.

Smart Grid Implementation

Advanced metering infrastructure enhances energy efficiency across the UK.

Urban Rewilding Projects

Cities implement rewilding initiatives to boost biodiversity and carbon sequestration.

Sustainable Supply Chains

Companies adopt greener technologies to meet sustainability demands.

Green Building Certifications

Increase in UK buildings achieving BREEAM reflects sustainable construction practices.

Renewable Energy Jobs

The renewable energy sector supports a growing number of UK jobs.

Tidal Energy Expansion

Wales invests heavily in tidal power projects to harness predictable energy.

Green Hydrogen Production

Scotland produces hydrogen gas using tidal energy, a world first.

Community Wind Farms

Innovative projects empower communities to invest in local wind energy.

Sustainable Aviation Fuels

UK airports explore sustainable fuels to reduce aviation emissions.



Electric Bus Fleets

Cities like Birmingham expand electric public transport to reduce emissions.

Zero Waste Retail

Supermarkets pilot refill stations to cut single-use plastic waste.

Urban Solar Projects

City rooftops are transformed into mini solar farms to power communities.

Circular Economy Manufacturing

Factories adopt processes to recycle and repurpose waste materials into new products.

Offshore Wind Expansion

The UK leads in offshore wind capacity, with significant projects in the North Sea.

Green Building Retrofitting

Older structures are upgraded, reducing their carbon footprints.

Urban Canopies

Green roofs and vertical gardens reduce London's heat island effect.

Rewilding National Parks

UK parks integrate renewable projects whilst restoring biodiversity.

Heat Pump Revolution

Sales of heat pumps soar as the UK replaces gas boilers.

Sustainable Agriculture

UK farmers increase adoption of regenerative farming techniques to boost soil health and reduce emissions.

CHALLENGES & CRITIQUES

Unpack the hurdles, inequalities, and limitations in achieving a fair and effective green transition across the UK.

06

Supply Chain Disruptions

Global events impact the availability of materials for renewable energy projects.

Rare Earth Dependency

The UK remains reliant on imports for critical minerals needed in greentech.

Wind Turbine Recycling

End-of-life disposal for wind turbines poses challenges to sustainability efforts.

EV Charging Infrastructure

Rural areas face accessibility gaps in EV charging stations.

Battery Waste Management

Growing EV adoption creates challenges for recycling and disposing of lithium batteries.

Labour Shortages

A lack of skilled workers slows the rollout of green infrastructure.

Carbon Credit Oversight

Concerns arise over the credibility and enforcement of carbon offset programs.

Equity in Energy Transition

Low-income households risk exclusion from the benefits of renewable energy adoption.

Policy Inconsistencies

Shifts in government policies create uncertainty in the greentech sector.

Investment Shortfalls

Economic challenges hinder investment in climate technologies.

FUTURE FORECASTS

Explore expert predictions, emerging trends, and forward-thinking innovations shaping the future of greentech in the UK and beyond.

Hydrogen Hubs

UK regions like Teesside are predicted to become global leaders in hydrogen production.

Floating Wind Expansion

UK aims to host 50% of Europe's floating offshore wind projects by 2030.

07

Sustainable Urban Mobility

Micromobility solutions, such as e-scooters and shared bikes, are forecasted to transform cities.

Fusion Power Development

UK-based research facilities progress toward achieving practical fusion energy by the 2040s.

Carbon-Neutral Airlines

The UK's aviation sector plans for net-zero operations through hydrogen and biofuel advancements by 2050.

Digital Twin Cities

Virtual models of cities will be used to optimise energy and reduce waste.

Sustainable Data Centres

Liquid cooling and renewable-powered servers will dominate the future of data infrastructure.

AI-Driven Energy Solutions

Machine learning will optimise grid management, boosting renewable energy integration.

Decentralised Energy Systems

Localized microgrids will empower communities with energy independence and resilience.

Global Green Leadership

The UK aspires to lead Europe in greentech patents and projects by 2030.



NOW OR NEVER!

The Green Revolution is a UK Manufacturing Opportunity for the Ages

The United Kingdom stands before a moment of truth, with the green revolution offering a transformative opportunity for its manufacturing sector.

Tony Hague, CEO of PP Control & Automation and the founders of PP Plus, emphasises that to fully harness this potential, the UK must prioritise domestic production of green technologies rather than outsourcing to foreign entities.

The clean energy landscape - including wind, solar, hydrogen, electric vehicles (EVs), and battery storage - is experiencing rapid growth, driven by ambitious net-zero targets and increasing public and governmental support. Notably, the UK has emerged as a global leader in offshore wind production. However, to sustain and enhance this leadership, it's crucial to develop and manufacture related technologies within the country.

Outsourcing production overseas risks forfeiting significant economic benefits and undermines the UK's position in the global green transition. By focusing on onshore manufacturing, the UK can stimulate economic growth, create jobs, and establish itself as a leader in sustainable innovation.

This approach not only aligns with environmental goals but also ensures that the economic advantages of the green revolution are retained domestically.

The green revolution presents a unique chance for the UK to revitalise its manufacturing sector. Seizing this opportunity requires a commitment to domestic production of green technologies, thereby securing economic prosperity and environmental sustainability for future generations.

Keep reading this and more thought leadership from PP Control & Automation's Shock of the New series: <https://www.ppcanda.com/tag/sotr/>

Network founder



Control & Automation
Complete manufacturing solutions

PP Control & Automation (PP C&A) is an award-winning strategic outsourcing partner to some of the world's most successful machine builders and OEMs.

Module or assembly based, part or full machine build outsourcing with PP C&A is a trouble-free process that lets machine builders and OEMs concentrate on core competencies and deliver their growth potential.

<https://www.ppcanda.com/>

<https://pp-plus.org/>

A-Z

PP Plus is designed to help create a more sustainable and environmentally friendly future by supporting the growth of technological innovations in the UK.

PP Plus offers three pillars of support that give access to hundreds of capabilities, services and methods to help you rise through seed investment, to the flourishing market debut of your groundbreaking green technology.



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silverstonetechnologycluster.com



Innovative robotics firm with 1,000+ employees shaping a world of human-robot collaboration.

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wantedstudio.co.uk



Department at University of Warwick, leveraging collaboration to drive future-shaping innovation.

warwick.ac.uk/fac/sci/wmg/

Contact the editor

For information, collaborations, opportunities to feature or offer feedback, contact [Richard Spears](#).

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