

biz4Biz

Sustainable Biz

MAY 2025

**AIRBUS SHOWCASES
HYDROGEN AIRCRAFT
TECHNOLOGIES DURING
ITS 2025 SUMMIT**

PAGE 6



**£12 MILLION BOOST
FOR ENERGY-INTENSIVE
INDUSTRIES TO CUT
EMISSIONS**

PAGE 22

**Carbon-sucking tech could
lower direct air capture costs**

PAGE 20

Inside



4 WELCOME

6 AIRBUS

Airbus showcases hydrogen aircraft technologies during its 2025 Summit

8 COCA-COLA FOUNDATION

Helping protect water for the next generation

10 AGRITECH

Sowing the seeds to Britain's farming success

14 T-MOBILE

Announces 2040 Net-Zero commitment

16 MERCEDES-BENZ

All-new GLC with EQ Technology triumphs in sub-zero tests

19 ARTEMIS II

Insighia honours all with symbolic mission patch

20 PHLAIR

Carbon-sucking tech could lower direct air capture costs

22 UK GOVERNMENT

£12 million boost for energy-intensive industries to cut emissions

24 PREMIER LEAGUE

Publishes Environmental Sustainability Strategy

26 HCCSP

Accelerating Retrofit for Business Growth

28 GLOBAL RECYCLING DAY

Celebrating award-winning sustainable packaging innovations

32 SIEMENS & GUOFU HYDROGEN

Partner to accelerate global green hydrogen production

34 UNITED AIRLINES

Invests in Heirloom to scale direct air capture



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Welcome

How the World is Changing

There are so many ways that we can care for our environment if everyone in the world takes the same level of control. Its fascinating to see that BYD from China are taking so much ground in the EV world and it is hoped that this will have a significant impact on China's contribution in support of Net Zero targets.

Our magazine once again reveals some wonderful stories about the progress being made in so many ways in the world of sustainability.

I recently enjoyed some time walking around the beautiful Lake District an area that I have visited and enjoyed for many years. During this trip, I was quite saddened to see so many large trees that

had clearly fallen in the past 12 to 24 months and to see that they had popped their root balls entirely out of the ground. The photos here clearly show this having happened.

Whilst touring within Forestry Commissions land areas, I was particularly saddened to see this tree cluster lifting the forest floor.

We all know how much rain we have endured across the UK and these photographs are the reality of what is the potential outcome of such bad weather. Let's hope that some global warming helps this issue to go away.

Speaking from a personal history of imports and exports, I genuinely believe that disturbing free trade agreements is not great for peace and harmony in our world.



ADRIAN HAWKINS OBE

biz4Biz Chairman, Chairman of the Stevenage Development Board, Hertfordshire Futures Board.



It's looking at such wonders of nature that make you wonder about the fate of mankind, and I can seriously recommend that you watch a series called 'Ancient Apocalypse' on Netflix if you can.

It's looking at such wonders of nature that make you wonder about the fate of mankind, and I can seriously recommend that you watch a series called "Ancient Apocalypse" on Netflix if you can. If you have ever wondered about the work put into Stonehenge or the Pyramids this series provides a fascinating insight into what might have been.

It is these natural issues that places the recent tariffs changes imposed by the USA in the context of our place in the world. How any nation, can consider they control the world economy is beyond belief. We are in a dangerous space when it comes to imposing significant and unfair tariffs on trade and speaking from a personal history of imports and exports, I genuinely believe that disturbing free trade agreements is not great for peace and harmony in our world.

Having travelled extensively throughout Asia and America in my career, some economies have managed their technological progress better than others and trying to curtail their desire to support the world economy with their competitive and capable produce in full conformity with international qualifications is not the best policy for continued friendship, technological advancement, cost control and inflation.

Let's hope that all these aspects are nothing more than simple reminders of our place in history, society and nature.





Airbus showcases hydrogen aircraft technologies during its 2025 Airbus Summit

During the 2025 Airbus Summit, Airbus provided an update on its roadmap to pioneer the future of commercial aviation in the decades to come, outlining plans to prepare a next-generation single-aisle aircraft that could enter service in the second half of the 2030s, as well as its revised ZEROe project roadmap to mature the technologies associated with hydrogen-powered flight.

At the Summit, Airbus reconfirmed its commitment to bring to market a commercially viable hydrogen aircraft and presented some of the key technology building blocks that will enable the advent of a fully electric, fuel-cell powered commercial aircraft – a pathway which stands out as the most promising, following years of research into hydrogen aviation. Airbus Head of Future Programmes Bruno Ficheteux says, “Hydrogen is at the heart of

Hydrogen is at the heart of our commitment to decarbonise aviation, driving the future of sustainable air transport.



Over the last five years, we explored multiple hydrogen-propulsion concepts and believe a fully electric, fuel-cell aircraft offers the best pathway to revolutionise aviation and deliver the necessary power density for commercial flight.

Airbus Head of the ZEROe Project, Glenn Llewellyn adds, “Over the last five years, we have explored multiple hydrogen-propulsion concepts, before down-selecting this fully electric concept. We are confident it could provide the necessary power density for a hydrogen-powered commercial aircraft and could evolve as we mature the technology. In the coming years, we will concentrate on advancing the storage, distribution and propulsion systems, while also advocating for the regulatory framework needed to ensure these aircraft can take flight.”

In 2023, Airbus successfully demonstrated a 1.2MW hydrogen-propulsion system, and in 2024, end-to-end testing of an integrated fuel cell stack, electric motors,

gearboxes, inverters and heat exchangers was completed. To address liquid hydrogen handling and distribution challenges in flight, Airbus, in collaboration with Air Liquide Advanced Technologies, has developed the Liquid Hydrogen BreadBoard (LH2BB) in Grenoble, France. Integrated ground testing is planned for 2027 at the Electric Aircraft System Test House in Munich, combining the propulsive bench and hydrogen distribution system for comprehensive system validation. Beyond the aircraft technologies, Airbus will continue to foster the emergence of a hydrogen aviation economy and the associated regulatory framework, which are also critical enablers to the advent of hydrogen-powered flight at scale.

our commitment to decarbonise aviation. While we’ve adjusted our roadmap, our dedication to hydrogen-powered flight is unwavering. Just as we saw in the automotive sector, fully electric aircraft powered by hydrogen fuel cells have the potential in the longer term to revolutionise air transport for the better, complementing the sustainable aviation fuel pathway.” These technologies were notably showcased as part of a new, notional concept of a hydrogen aircraft powered by four, 2-megawatt electric propulsion engines, each driven by a fuel cell system that converts hydrogen and oxygen into electrical energy. The four fuel cell systems would be supplied via two liquid hydrogen tanks. This concept will continue to be refined over the coming years as additional tests will help mature the technologies associated with hydrogen storage and distribution, as well as with the propulsion systems.





Agritech - sowing the seeds to Britain's farming success

Barclays calls on government to spearhead development of Agritech and renews partnership with University of Lincoln to support agricultural start-ups and entrepreneurs. London, 3 April 2025: Agritech is worth an estimated £13bn to the UK economy[1], but new research from Barclays finds that while six in ten farmers plan to adopt technological innovations, they are not being provided with the support needed, despite its potential to improve productivity and bottom lines.

Agritech is transforming the future of farming, harnessing drones, robotics, and AI to boost productivity and resilience.

Barclays has been working with the UK agricultural sector for over 280 years and lends £1 in every £4 to the sector. Its latest report, Agritech: supporting the future of farming draws on insights from farmers and Agritech companies to highlight key barriers slowing the adoption of such transformative technologies. Financial challenges coupled with perceived lack of government support were highlighted as the primary obstacles. Almost half (45%) of farmers surveyed cited an unclear return on investment and extensive upfront costs (41%) as



Financial challenges, unclear returns on investment, and a lack of long-term government support are slowing the adoption of transformative agricultural technologies, putting the UK at risk of falling behind other countries.

key financial barriers, followed by a lack of knowledge on how best to use the technologies (24%).

Against a challenging political backdrop, farmers felt there was more that the government could do to support them, from providing clarity around long-term policy (71%), providing more support and guidance on sustainable farming practices (48%), to providing overall support for and promotion of UK farms (48%).

The report also highlights the risk the UK could face in falling behind other geographies if it can't get the supporting supply chain and ecosystem aligned. One company executive quoted in the report called out the difference between the UK and Europe, "What I'm seeing in continental Europe is a real joined up approach from farmer to manufacturer, universities are involved, etc. I don't see that in the UK – in fact, I've seen the reverse."

Barclays is calling on government to address these barriers and spearhead the development and adoption of this critical industry, through three key actions:

1. Develop and communicate a clear national strategy for the agriculture transition, clearly setting out the role Agritech can play
2. Provide broad financial support for both Agritech development and adoption, including guarantees and deploying targeted support via the National Wealth Fund and British Business Bank
3. Create a catalytic ecosystem-wide hub through the combined UK Agritech centres[2], bringing together actors from across the sector to enable better collaboration, as well as develop a dedicated skills programme to support the domestic talent pipeline

Barclays, in parallel, is renewing its Eagle Lab partnership with the University of

Lincoln. Launched in 2020, the partnership is focused on supporting agricultural start-ups and entrepreneurs, providing access to facilities including a dedicated robotics lab, as well as to experts across the industry.

Abdul Qureshi, Managing Director, Business Banking, Barclays, said: "Agritech will transform the UK's farming landscape. From drones, AI to robotics, Agritech is supercharging an industry that feeds us all. At a time when farming is being asked to do more with less, we recognise it will take a collective effort to create the right enabling environment, but if we get this right, Agritech can help our farmers, and play a meaningful role in both protecting and driving forward one of Britain's most vital sectors. As the government develops its 25-year agriculture roadmap and national food plan, there is no better time."

Four ways the Coca-Cola Foundation and partners are helping protect water for the next generation

Water is essential for life, communities and making beverages people love. Water is local, so the Coca-Cola Foundation focus on what matters most locally. The Coca-Cola Company's water strategy includes efficient water use in operations, as well as giving water back to nature and communities. Together the Coca-Cola system and The Coca-Cola Foundation (TCCF) invest in projects worldwide to improve watersheds that supply water for drinking, agriculture and manufacturing. Since 2015, more than 100% of the water used in finished beverages has been returned to nature and communities

This work is done with significant support from TCCF. "We continue to make a difference by supporting collective action to sustain healthy, resilient watersheds for the people and places that need it most, from Africa's Great Limpopo watershed to the forests of California," said Carlos Pagoaga, President of TCCF.

Returning hope to the Eastern Himalayas

High in the mountains of West Bengal, India, Prabhat Rai was watching his land disappear. His home is part of an ecosystem made of the world's tallest mountains, major rivers

From the Eastern Himalayas to Southern Africa, innovative restoration projects are helping protect watersheds, support biodiversity, and build long-term resilience for millions of people who rely on healthy rivers, forests, and groundwater systems.



Punakha District, Bhutan. Credit: Conservation International / photo by PLUC Network



*Tree climbing contractors gather cones that have been dropped by climbers in the Eldorado National Forest.
Credit: Andrew Studer /American Forest*

and the world's largest mangrove forest. But deforestation is significantly reducing green cover in the region and residents are among the most impacted by climate change, frequently facing threats like severe storms and flooding.

"Rainfall would strip away the soil, making it harder to farm and build a future for our children," Prabhat said. "Before, we had no idea how to protect our land from erosion." Today Prabhat uses terrace farming, a solar-powered irrigation system and follows water management practices thanks to an initiative launched in 2024 by Conservation International, with funding from TCCF, Inditex and other partners.

The project is a joint effort with the people of the Eastern Himalayas to restore degraded forests, riverbanks and mangroves across India, Bangladesh, Nepal and Bhutan. Guided by a scientific framework, the goal of the initiative, according to Conservation International, is to plant one billion trees and restore one million hectares of forest by 2030, indirectly benefiting one billion people who depend on this ecosystem. "I no longer feel helpless when it rains," said Prabhat. "We are restoring what we lost...and safeguarding our homeland for generations to come."

Replanting California's fire-ravaged forests

Since 1985, there's been an eightfold increase in high severity wildfires in the western United States. Without human intervention, it could take decades for nature to recover from these catastrophic events. Last year, TCCF and American Forests

formed a three-year partnership to reforest more than 1,700 acres ravaged by the 2021 Caldor Fire in California's Eldorado National Forest. The fire destroyed vegetation and roots, causing loose soil and debris to wash into two watersheds that serve over 175,000 people downstream. To repair the soil and reduce erosion, the

**Water is local, so every project is
rooted in restoring ecosystems
and helping communities where it
matters most.**

The Danube: The lifeline of Europe



project funds the collection of cones from existing trees to reforest the area and help create a more resilient landscape.

“All of our reforestation efforts in the South Fork American River and Cosumnes River support improving the water quality and quantity for local agricultural activities and residents who rely on these watersheds for their lives and livelihoods,” said Brian Kittler, Chief Program Officer, Resilient Forests.

Between March and April 2024, 332,000 trees were planted on National Forest System land. Later that year, around 1,500 bushels of cones were collected and delivered, as a direct result of TCCF funding, to nurseries for future planting. As the watershed recovers, it's expected to save up to 1.2 billion litres in net runoff every year. “There's hope in these cones for future forests,” said Leana Weissberg, California Director, American Forests.

Reviving the Danube River Basin

For more than a decade, TCCF has supported The Living Danube Partnership,

initiated by the World Wildlife Fund Central and Eastern Europe (WWF-CEE), the International Commission for the Protection of the Danube River (ICPDR) and local and national stakeholders. The project is helping protect and restore Europe's second largest river basin, which flows through 19 countries.

It's estimated that more than 80% of floodplains and wetlands along the Danube River and its tributaries have been lost and with them vital ecosystems, goods and services - from fish and fowl to water management and purification. Compounding the loss is how wetlands can continue to serve as a natural buffer against flooding and droughts and act as carbon sinks, which helps mitigate water stress and climate change.

Since rivers know no borders, only collective action can address this challenge effectively. In 2021, The Living Danube Partnership completed its initial restoration projects in Austria, Bulgaria, Croatia, Hungary, Serbia and Romania, which improved more than 5,000 hectares of vital wetlands, rivers and floodplains and helped replenish

By restoring floodplains, planting trees, and improving water systems, these global partnerships are securing the future of clean water, while supporting biodiversity, livelihoods, and the climate resilience of entire regions.



approximately 13.45 million m³ of water annually. As water returned to wetlands, so did the sounds of nature, as birds, fish and amphibians settled back in their home. The next three-year continuation of this initiative spans six countries and aims to further reduce water stress and improve biodiversity for this vital lifeline to the continent.

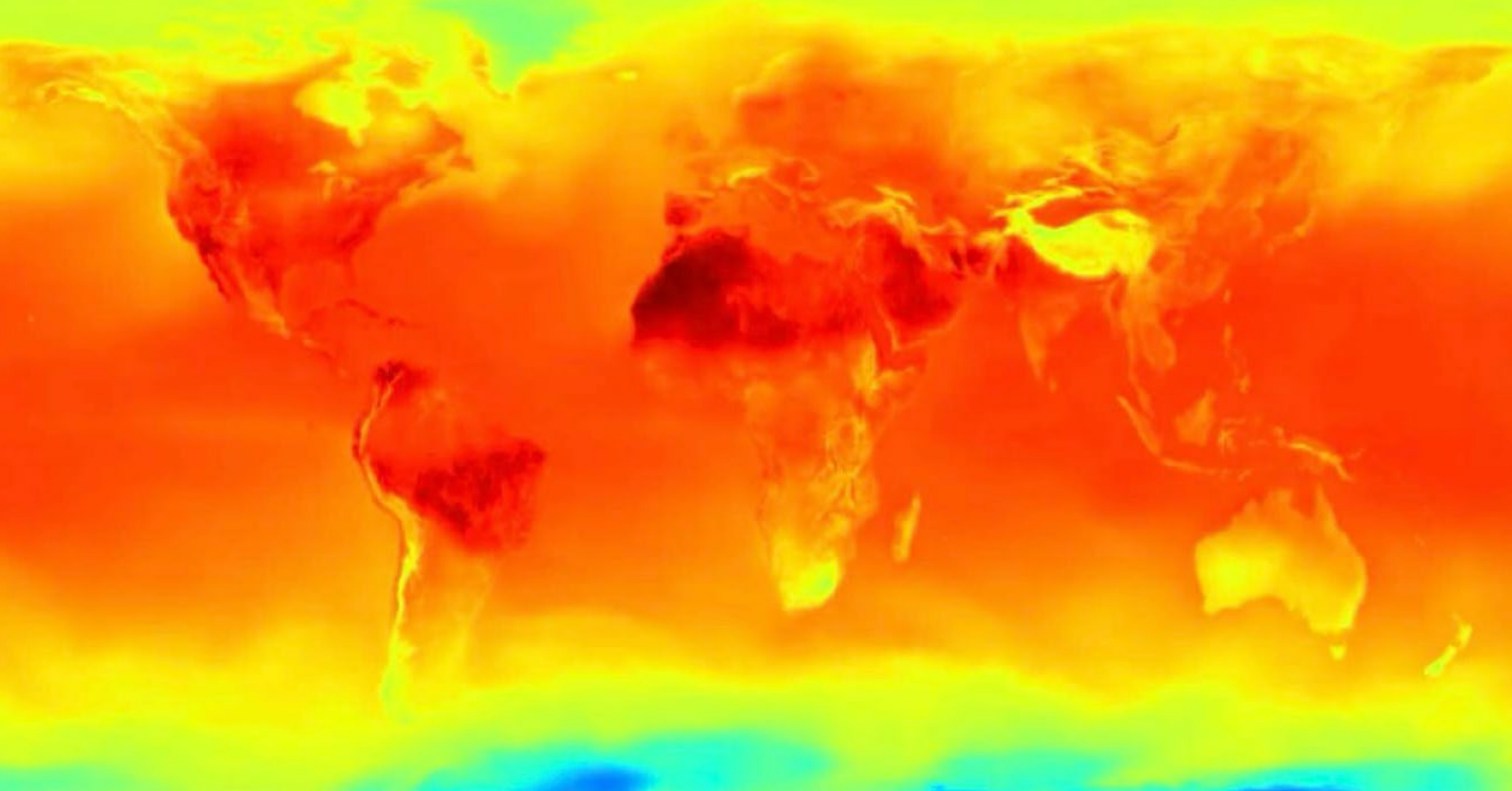
Repairing catchments in Southern Africa
In Africa, the expansive Great Limpopo River Basin supports millions of people in Botswana, Mozambique, South Africa and Zimbabwe. In recent years, the impacts associated with climate change, excessive water extraction, and alien invasive plants have degraded local catchments, causing rapid declines in groundwater and surface water levels. To help, TCCF along with complementary investments from Global Affairs Canada is funding a Conservation International restoration initiative in the watershed and along the rivers for communities at the border of South Africa and Zimbabwe in the Great Limpopo Transfrontier Conservation Area. The project is helping safeguard biodiversity and secure water supply, improving water governance, promoting agroforestry and land restoration and

helping residents better prepare for droughts through practices like climate-smart livestock grazing.

“This investment is more than restoration—it is a legacy of sustainability, where nature and communities grow stronger together,” said Tonderai Makoni, Executive Director of the Vembe Biosphere Reserve. “The future [being] shaped is one where harmony between water, land and people defines our shared success.”

There's hope in these cones
for future forests, a living
symbol of recovery after
devastating wildfires.





T-Mobile Announces 2040 Net-Zero Commitment

IBM have announced a new AI foundation model for a variety of weather and climate use cases, available in open-source to the scientific, developer, and business communities. Developed by IBM and NASA, with contributions from Oak Ridge National Laboratory, the model offers a flexible, scalable way to address a variety of challenges related to short-term weather as well as long-term climate projection. Because of its unique design and training regime, the weather and climate foundation model can tackle far more applications than existing weather AI models, as outlined in a paper recently published on arXiv, "Prithvi WxC: Foundation Model for Weather and Climate." Potential applications include creating targeted forecasts based on local observations, detecting and predicting severe weather patterns, improving the spatial resolution of global climate simulations, and improving how physical

processes are represented in numerical weather and climate models. In one experiment in the above identified paper, the foundation model accurately reconstructed global surface temperatures from a random sample of only five percent original data, suggesting a broader application to problems in data assimilation.

This model was pre-trained on 40 years of Earth observation data from NASA's Modern-Era Retrospective analysis for Research and Applications, Version 2 (MERRA-2). As a foundation model, it has a unique architecture which allows it to be fine-tuned to global, regional, and local scales. This flexibility makes it suited for a range of weather studies.

The foundation model is available for download on Hugging Face, along with two fine-tuned versions of the model that tackle specific scientific and industry-relevant applications. These are:

Climate and weather data downscaling;

With 40 years of Earth observation data and a flexible AI architecture, this model enables hyperlocal forecasting, gravity wave analysis, and scalable climate research — supporting decisions from daily weather to long-term environmental strategy.

A common meteorological practice is downscaling—inferring high-resolution outputs from low-resolution variables. Typical data inputs include temperature, precipitation, and surface winds, all of which can have varied resolutions. The model can depict both weather and climate data at up to 12x resolution, generating localized forecasts and climate projections. The fine-tuned downscaling model is available on the IBM Granite page on Hugging Face.

Gravity wave parametrisation: Gravity waves are ubiquitous throughout the atmosphere and can affect many atmospheric processes related to climate and weather, such as cloud formation and aircraft turbulence. Traditionally, existing numerical climate models have not sufficiently captured gravity waves, which leads to uncertainties in terms of how exactly gravity waves can affect climate processes. This weather and climate foundation model can help scientists better estimate gravity wave generation, to improve the accuracy of numerical weather and climate models and constrain uncertainty when simulating future weather and climate events. This gravity wave parametrisation model is being released as part of the NASA-IBM Prithvi family of models on Hugging Face.

"Advancing NASA's Earth science for the benefit of humanity means delivering actionable science in ways that are useful to people, organizations, and communities. The rapid changes we're witnessing on our home planet demand this strategy to meet the urgency of the moment," said Karen St. Germain, director of the Earth Science Division of NASA's Science Mission Directorate. "The NASA foundation model will help us produce a tool that people can use: weather, seasonal, and climate projections to help inform decisions on how to prepare, respond, and mitigate."

"This space has seen the emergence of large AI models that focus on a fixed dataset and single use case — primarily forecasting. We have designed our weather and climate foundation model to go beyond such limitations so that it can be tuned to a variety of inputs and uses," said Juan Bernabe-Moreno, Director of IBM Research Europe (UK and Ireland) and IBM's Accelerated Discovery Lead for Climate and Sustainability. "For example, the model can run both on the entire earth as well as in a local context. With such flexibility on the technology side, this model is well-

suited to help us understand meteorological phenomena such as hurricanes or atmospheric rivers, reason about future potential climate risks by increasing the resolution of climate models, and finally inform our understanding of imminent severe weather events."

"As a premier research institution and computing facility, we're focused on supporting teams to make research breakthroughs across many areas of science," said Arjun Shankar, director of

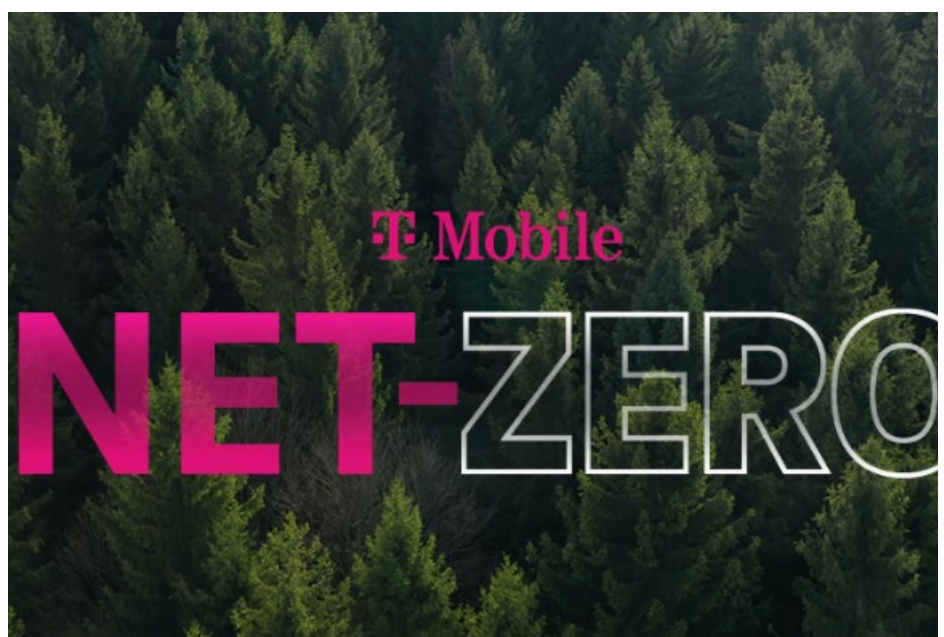
This open-source foundation model helps generate high-resolution climate projections, short-term forecasts, and deeper insights into atmospheric processes

the National Center for Computational Sciences at Oak Ridge National Laboratory. "Our collaboration with IBM and NASA to support the creation of the Prithvi weather and climate foundation model was a key part of our goal to bring advanced computing and data to problems of national

importance, in this case, for weather and climate applications, which need continued computational science and model skill improvements to be impactful."

IBM has already collaborated with Environment and Climate Change Canada (ECCC) with a view to test the flexibility of the model with additional weather forecasting use cases. With the model, ECCC is exploring very short-term precipitation forecasts using a technique called precipitation nowcasting that ingests real-time radar data as input. The team is also testing the downscaling approach from global model forecasts at 15 km to km-scale resolution.

This weather and climate model is part of a larger collaboration between IBM Research and NASA to use AI technology to explore our planet, and joins the Prithvi family of AI foundation models. Last year, IBM and NASA made the Prithvi geospatial AI foundation model the largest open-source geospatial AI model available on Hugging Face. This geospatial foundation model has since been used by governments, companies, and public institutions to examine changes in disaster patterns, biodiversity, land use, and other geophysical processes. The foundation model and the gravity wave parametrisation model can be accessed through the NASA-IBM Hugging Face page and the downscaling model can be accessed through the IBM Granite Hugging Face page.





The all-new Mercedes-Benz GLC with EQ Technology triumphs in extreme sub-zero tests

The GLC has long reigned as the most popular SUV model from Mercedes-Benz and, in 2024, it was the brand's best-selling series. Now, customers can anticipate an exciting addition: a new all-electric GLC will enhance the lineup. This GLC establishes a milestone for Mercedes-Benz. Moving forward, there will be a diverse array of powertrains to cater to all customer needs. Engineered as a battery electric vehicle (BEV), the new all-electric GLC incorporates the latest technology from the esteemed brand. In terms of performance, range, efficiency and charging speed,

the electric GLC sets new benchmarks. Simultaneously, it delivers outstanding levels of versatility and practicality like its best-selling siblings.

Heavily camouflaged prototypes of the electric GLC recently embarked on rigorous winter trials in the polar regions of Sweden. Facing temperatures plunging well below freezing and conquering snow-covered roads, these test vehicles triumphed over the most formidable natural conditions with unwavering resilience and exceptional performance.

"Our new electric GLC is a car without compromises – and we test it just as

uncompromisingly. During winter testing in Sweden, our new, all-electric GLC demonstrated its reliability and robustness even under extreme conditions. It represents innovation and quality – a fact we have proven in the Scandinavian winter." Christoph Starzynski, Vice President Overall Vehicle Development & Integration, Mercedes-Benz Group AG
Due to the highly efficient concept of the battery-electric Mercedes-Benz, new challenges arise during the cold season. Nevertheless, the all-electric GLC rises to the occasion, delivering high efficiency and practical range even in blisteringly



Engineered for resilience, the all-electric GLC performs effortlessly even on snow-covered tracks and sub-zero terrain.

low temperatures. Even on winter roads, it upholds the exceptional safety and driving comfort standards that customers have come to expect from Mercedes-Benz.

The new GLC with EQ Technology on ice and snow: confident handling and responsive all-wheel drive. During harsh winter testing in Swedish Arjeplog, the new Mercedes-Benz GLC showcased its exceptional ride and handling qualities, as well as superior traction on winter roads thanks to 4MATIC. The all-wheel-drive models feature a powerful front-axle drive unit, which can be swiftly engaged or disengaged using a Disconnect Unit (DCU) when needed.

To ensure optimal traction and driving stability on snow and ice, sensors detect spinning wheels and distribute torque according to the operating strategy. Since both electric motors are controlled independently, the driving force remains optimally maintained.

In the new, all-electric GLC, the entirely Mercedes-Benz-developed electric drive unit on the rear axle sets new benchmarks,

delivering an impressive power. For exceptionally efficient energy use, both electric drive units are equipped with high-performance power electronics featuring cutting-edge silicon carbide inverters. In addition to the sensitive and responsive all-wheel drive and precise steering, the new system also impresses on the Swedish tracks. This innovative braking system combines the previously separate components of the brake booster, master cylinder and ESP® control into a compact module, providing a confident brake pedal feel that delivers precise and consistent feedback. The system meticulously optimises the recuperation of braking energy, thereby augmenting the vehicle's range. The concept guarantees that the driver consistently experiences a confident and transparent brake pedal feel, irrespective of whether braking is accomplished through recuperation or friction braking. Furthermore, the new braking system upholds the brand's exceptionally high safety standards: In case of errors, the system reliably switches to the hydraulic fallback

level, thereby always ensuring safe braking behaviour.

Travel with ease: modern BEV technology for long driving range and quick charging stops. With its cutting-edge battery and drive technologies, the all-electric GLC achieves an impressive range even in very cold conditions. Among its technological marvels are the 800-volt architecture and sophisticated drive units featuring a two-speed transmission on the primary rear axle drive unit. This 800-volt system optimises both efficiency and performance, substantially reducing charging times.

Various iterations of high-voltage batteries will be available for the GLC. The premier battery variant will support DC charging with sustained rates of more than 320 kW[1]. Beyond their usable energy capacity, these batteries also differ in cell chemistry. The top-tier battery cells use anodes with silicon oxide blended into graphite, achieving exceptionally high gravimetric energy density. This allows for longer driving ranges and lighter batteries, enhancing vehicle efficiency and performance. Consequently, the GLC benefits from better fuel efficiency and greater practicality. Even operation in the deepest wintry conditions, the all-electric GLC astounds with exceptional temperature comfort. The forthcoming model will be equipped as standard with an air-side heat pump. When it comes to heating the interior, this system utilises approximately one-third of the electrical energy that a comparable electric heater would consume to achieve the same output under identical conditions. As a multi-source system, the



heat pump can simultaneously harness three energy sources: waste heat from the electric-drive unit, waste heat from the battery and ambient air. The heat pump is part of the climate control system, which cools in the summer and heats in the winter. This approach allows the heat pump to facilitate exceptionally high charging performance by preconditioning the high-voltage battery to its optimal temperature range prior to fast charging. Concurrently, it aligns with Mercedes-Benz's philosophy that efficiency should not compromise passenger comfort and well-being. Even during fast charging, the interior remains at a comfortable temperature – a development objective validated in Sweden's polar region. In Arjeplog and beyond: Mercedes-Benz's Rigorous Testing Program For decades, Mercedes-Benz has subjected each new model to the most extreme conditions near the Arctic Circle. As a result, the vehicles endure temperatures as low as minus 25 degrees Celsius as well as navigating snow-laden roads and traversing the sheer ice of frozen lakes. To facilitate this, the company operates a dedicated testing centre in Arjeplog, close to the Arctic Circle in Sweden. Beyond road testing in the far north, the centre features meticulously designed test tracks. These include challenging hill climbs with gradients up to 20 percent, test tracks with varying

friction coefficients, handling courses and circular tracks on the nearly bare ice of the frozen lake, all of which impose significant demands on the drive and control systems. To ensure the overall vehicle integrity, more than 500 individual tests are carried out as part of the trial program for a new Mercedes-Benz model. For electric

The electric GLC sets new standards for winter performance, blending innovation, efficiency, and confident all-terrain handling.

vehicles, more than hundred drive-specific tests are added to the standard procedures, developed specifically for the new drive technologies. About two thirds of them specifically concern eDrive and charging. New challenges for an electric vehicle include the power output of the electric motor during a cold start with a chilled battery, range in customer driving conditions, handling of charging cables, preconditioning and the operating strategy

including recuperation. Additionally, the specific tuning of driving dynamics and the ESP® system is crucial.

To test various customer requirements and charging profiles, the Arjeplog test centre offers the full range of charging options: from simple household outlets to wall boxes and fast-charging stations.

Systematic overall vehicle validation is a comprehensive measure in the development process of every Mercedes-Benz series, ensuring high-quality standards. In addition to winter testing, summer testing with intense sunlight and temperatures up to 50 degrees Celsius is also conducted, for example in Arizona and South Africa. Before a new vehicle goes into series production, it must meet the development standards and reliability defined by Mercedes-Benz. This happens in several steps: First, digital preliminary designs and simulations are conducted to prove the feasibility of the concept. Then, the individual components are validated on test benches or in corresponding test vehicles. For example, the durability of the drivetrain and axle parts is tested to ensure they last. Subsequently, the systems are tested and approved in the complete vehicle. The customer's perspective is crucial: Even under extreme conditions and in all relevant usage scenarios, a Mercedes-Benz must be highly functional and reliable.





Artemis II Insignia Honours All

The four astronauts who will be the first to fly to the Moon under NASA's Artemis campaign have designed an emblem to represent their mission that references both their distant destination and the home they will return to. The crew unveiled their patch in this April 2, 2025, photo.

The crew explained the patch's symbolism, and its play on the abbreviation of Artemis II to AII, with the following description: The Artemis II test flight begins when a mighty team launches the first crew of the Artemis generation. This patch designates the mission as "AII," signifying not only the second major flight of the Artemis campaign, but also an endeavour of discovery that seeks to explore for all and by all. Framed in Apollo 8's famous Earthrise photo, the scene of the Earth and the Moon

Artemis II is a journey of discovery - exploring the Moon while gaining perspective on our shared Earth

represents the dual nature of human spaceflight, both equally compelling: The Moon represents our exploration destination, focused on discovery of the unknown. The Earth represents home, focused on the perspective we gain when we look back at our shared planet and learn what it is to be uniquely human.

The orbit around Earth highlights the ongoing exploration missions that have enabled Artemis to set sights on a long-term presence on the Moon and soon, Mars. Commander Reid Wiseman, pilot Victor Glover, and mission specialist Christina Koch from NASA, and mission specialist Jeremy Hansen from CSA (Canadian Space Agency), will venture around the Moon in 2026 on Artemis II. The 10-day flight will test NASA's foundational human deep space exploration capabilities, the SLS rocket, Orion spacecraft, for the first time with astronauts. Through Artemis, NASA will send astronauts to explore the Moon for scientific discovery, economic benefits, and build the foundation for the first crewed missions to Mars.

Text credit: Brandi Dean, Courtney Beasley
Artemis II Insignia Honours All

Image credit: NASA/Robert Markowitz

Phlair's carbon-sucking technology could lower direct air capture's costs

When it comes to climate change, there's no such thing as a "get out of jail free" card. But there might be an inexpensive alternative: direct air capture.

The technology isn't exactly an exoneration, but more like community service; it promises to suck massive amounts of carbon dioxide out of the atmosphere, atoning for our century-plus of transgressive burning of fossil fuels. Scientifically, it's a sound idea. Commercially, it has been less so.

Currently, it costs about \$600 to \$1,000 to capture a metric ton of carbon, which is far more than anyone thinks is commercially viable. So myriad startups are racing to cut costs, aiming to capture one metric ton of carbon dioxide for \$100 or less.



Even at that price, it could be a difficult sell since burning fossil fuels remains, for the most part, free. But many investors and even a few multinational corporations like Microsoft, Shopify, and Stripe are betting that eventually, the world will embrace direct air capture, much like how we treat wastewater today instead of dumping it into a river.

Larger startups like Climeworks and Carbon Engineering are betting that scale will help rein costs in. Both companies use sorbents to draw out the carbon dioxide and use heat to release it from the sorbents so it can be stored elsewhere. Smaller startups suggest that scale alone won't be enough, though. "Thermal regeneration is always the expensive step, energy wise," said Malte Feucht, co-founder and CEO of Phlair, a young direct air

Capturing a meaningful amount of carbon, around 10 gigatons per year, using traditional approaches would require nearly three-quarters of all the electricity generated in the world today. That's why different methods, like using a pH swing instead of heat, are critical to making direct air capture commercially viable.



capture startup. He may have a point. One study says that capturing a meaningful amount of carbon, around 10 gigatons per year, using Carbon Engineering's approach would require nearly three-quarters of all the electricity generated in the world today. Feucht's company thinks that a different approach that doesn't rely on heat might help bring costs down. Like most direct air capture companies, Phlair uses fans to blow air over an absorber. But instead of heating the sorbent, it uses an acid to liberate the carbon dioxide. To produce the acid and base used in the process, Phlair, formerly known as Carbon Atlantis, developed a device it calls a hydrolyser.

The hydrolyser borrows heavily from the hydrogen industry, taking elements from both membrane-based electrolyzers and membrane-based fuel cells, Feucht said. (An electrolyser makes hydrogen using electricity, whereas a fuel cell consumes hydrogen to produce it.)

"Instead of hydrogen, we only produce acids and bases," he said.

Phlair's DAC machine employs what's known as the "pH swing" method to capture carbon dioxide. Inside, the basic (high pH) solvent absorbs carbon dioxide as it flows through the air contractor. After the saturated solvent exits the contractor, it is dumped into a tank where it's doused with acid (low pH). That swing in pH from high to low spurs a chemical reaction that releases the carbon dioxide so it can be piped elsewhere to be used or stored. The

solvent then flows back into the hydrolyser where it's regenerated.

Phlair is deploying a pilot in the next few weeks, Feucht said, that can capture around 10 metric tons of carbon per year. After that, the startup is working on larger, 260-metric-ton plants that are scheduled to come online in late 2025. One being built with Paebbl in the Netherlands will deliver carbon to help make a cement additive, while the other in Canada will be built with Deep Sky, a carbon removal project developer, which will store the carbon.

The DAC startup has already sold a number of carbon credits to organizations like Frontier, which works with Alphabet, Meta, Shopify, Stripe, and others to create an advanced market commitment for direct air capture.

To help complete the larger projects, Phlair has raised a €12 million seed round along with a €2.5 million grant from the EU's EIC Accelerator. Extantia Capital led the investment round with Atlantic Labs, Counteract, Planet A, UnternehmerTUM Funding for Innovators, and Verve Ventures participating.

"I think this is a sort of a unique time in history. Ten years ago, you would have probably needed to found an NGO to do what we're doing," Feucht said. "Now there's a real opportunity to serve customers, to build a functioning company, but then also to address that [carbon] problem. For me, that's my personal, super big motivation."

Energy intensive industries given £12 million boost to cut emissions and costs

Plenty Unlimited Inc. opened the world's first farm to grow indoor, vertically farmed berries at scale. Plenty farms are the most technologically advanced farms in the world – removing the unpredictability of Mother Nature and making it possible to grow produce with peak-season flavour, year-round, almost anywhere in the world. The Plenty Richmond Farm is designed to produce more than 4 million pounds of strawberries annually in less than 40,000 square feet by growing vertically on 30-foot-tall towers. The farm will exclusively grow Driscoll's strawberries, combining Plenty's advanced technology with global premium berry

This farm is a model for the positive impact climate-agnostic agriculture can have, and proof that vertical farming can deliver the crop diversity, scaled and local production needed to future-proof the global food system

leader Driscoll's advanced genetics. The first strawberries from the farm will be available in early 2025. "With agriculture serving as the Commonwealth's largest private sector industry, Plenty choosing Virginia for the world's first farm to grow indoor, vertically farmed berries at scale reinforces Virginia's leading role in the controlled environment agriculture industry," said Governor Glenn Youngkin. "Plenty's farm will boost local agriculture production and drive economic development, all while diversifying against risks and protecting the environment. We look forward to supporting their innovative approaches to revolutionizing the industry, and know that Plenty's





success will be Virginia's success." While most vertical farms are limited to lettuces, Plenty spent the past decade designing a patent-pending, modular growing system flexible enough to support a wide variety of crops – including strawberries. Growing on vertical towers enables uniform delivery of nutrients, superior airflow and more intense lighting, delivering increased yield with consistent quality. Every element of the Plenty Richmond Farm—including temperature, light and humidity—is precisely controlled through proprietary software to create the perfect environment for the strawberry plants to thrive. The farm uses AI to analyse more than 10 million data points each day across its 12 grow rooms, adapting each grow room's environment to the evolving needs of the plants – creating the perfect environment for Driscoll's proprietary plants to thrive and optimizing the strawberries' flavour, texture and size. Even pollination has been engineered by Plenty, using a patent-pending method that

evenly distributes controlled airflow across the strawberry flowers for more efficient and effective pollination than using bees, supporting more uniform strawberry size and shape. "This farm is a model for the positive impact climate-agnostic agriculture can have, and proof that vertical farming can deliver the crop diversity, scaled and local production needed to future-proof the global food system," said Arama Kukutai, Plenty CEO. "The Plenty Richmond Farm is the culmination of 200 research trials over the past six years to perfect growing strawberries with consistent peak-season flavor indoors year-round. Driscoll's sets an incredibly high bar for the quality of its berries and we're excited to join forces to consistently deliver an ultra-premium Driscoll's strawberry year-round." The Plenty Richmond Farm brings year-round production of fresh produce within a one-day drive of more than 100 million consumers. Growing locally reduces food miles and food waste, and the farm

itself uses 97 percent less land and up to 90 percent less water than conventional farming. "Partnering with Plenty for the launch of the Richmond Farm allows us to bring our premium strawberries closer to consumers in the Northeast, the largest berry consumption region in the U.S.," said Soren Bjorn, Driscoll's CEO. "By combining our 100 years of farming expertise and proprietary varieties along with Plenty's cutting-edge technology, we can deliver the same consistent flavor and quality our customers love—now grown locally. This new innovative farm is a powerful step forward in continuing to drive category growth in new ways for our customers and consumers." The Plenty Richmond Farm is slated to bring more than 60 jobs to Virginia and is the first farm to open on Plenty's 120-acre farm campus. The Plenty Richmond Farm Campus is the largest indoor vertical farm campus in the world and a projected \$300 million investment that is planned to bring more than 300 total jobs to Virginia.



Premier League publishes Environmental Sustainability Strategy

The Premier League has published its Environmental Sustainability Strategy, reaffirming its commitment to addressing environmental issues and building on existing work to support long-term change. The strategy outlines the Premier League's ambition as an organisation, with the aim of accelerating positive environmental change through central operations and engagement with fans and community participants. To achieve this, the League has set out three priority areas of work:

1. Adapting business, with the aim of becoming net zero by 2040

2. Future-proofing the game by supporting decarbonisation across the Premier League

3. Engaging and inspiring fans by encouraging action through our programmes and platforms

Premier League Chief Executive, Richard Masters, said: "Premier League football is enjoyed by hundreds of millions of fans around the world. We have the ability to reach and influence a significant global audience, raising awareness of climate change issues and helping to inspire positive behaviour change. "We will regularly review our programme of work,

Premier League football is enjoyed by hundreds of millions of fans around the world, giving us a powerful platform to inspire positive environmental change.

to keep our strategy up to date as our business and the wider industry continues to evolve. We know there is much work to do, but we are fully committed to this strategy.” The publication of the Premier League Environmental Sustainability Strategy follows on from the League becoming a signatory of the UN Sports for Climate Action Framework in 2021, committing to achieving net zero emissions by 2040. In 2024, Premier League clubs agreed to the introduction of an Environmental Sustainability Commitment, which introduced a minimum standard of action on environmental issues across the clubs and League. Work will continue with clubs to support them in achieving their own ambitions, with a club working group providing a forum for sharing best practice. Education on environmental sustainability remains a focus area for the League’s work. Through the Premier

The Premier League’s ambition is to accelerate positive environmental change through central operations, engagement with fans and communities, and supporting decarbonisation efforts across clubs, helping future-proof the game for generations to come.

League Lifeskills and Personal Development Programme, Academy players are able to access free sustainability sessions to enhance their understanding of climate change. Through Premier League Primary Stars, the League has supported more than 70,000 primary school teachers across England and Wales with access to free downloadable Protect the Planet resources. The education pack encourages children

aged five to 11 to learn about nature, why it is important and how reducing use of certain energy sources will benefit the environment.

Download the Premier League Environmental Sustainability Strategy [here](#).

See more about how the Premier League is committed to sustainability [here](#).





Accelerating Retrofit for Business Growth

By Helen Burrridge, Hertfordshire Climate Change and Sustainability Partnership (HCCSP) Manager



For many small businesses, 'greening' operations still conjures up images of recycling bins and vegetarian catering. But with rising energy prices, increasing public expectations around sustainability, and building costs representing a significant chunk of overheads, there's a strong commercial case for upgrading your premises. Retrofitting – improving the energy performance of buildings – isn't just for homeowners. It's a smart move for business, too.

The Business Case for Retrofit

From independent shops and salons to offices and workshops, businesses across Hertfordshire could benefit from retrofitting – especially those in older buildings. Upgrades can range from simple steps like better insulation and LED lighting to more substantial changes like installing solar panels or switching to low-carbon heating systems.

Benefits include:

- Lower energy bills
- More comfortable and efficient premises
- Improved green credentials for clients and staff

Although many available guides focus on homes, the measures apply just as well to small business premises – particularly those in similar property types. That's why Hertfordshire councils have produced easy-to-follow resources showing what upgrades are possible, their costs, and expected savings alongside a more comprehensive project to mobilise action across the whole construction system.

A Joined-Up Local Effort

Until recently, Hertfordshire's retrofit efforts were happening in silos – with planners, asset managers, training, housing and sustainability teams all working separately. Through the Local Area Retrofit Accelerator (LARA) project, Hertfordshire councils and Hertfordshire Futures have come together with wider stakeholders to develop a shared strategy. This collaboration is unlocking funding, strengthening the supply chain, and making retrofit simpler for residents and businesses. LARA isn't just about insulation and heat pumps. It's about building a supportive ecosystem – with better information, training opportunities, and access to finance – so more people can take action.

Retrofitting offers businesses the chance to cut costs, improve comfort, and show leadership in sustainability – while also strengthening Hertfordshire's green economy.

What Can Businesses Do?

Whether you own your premises or rent a unit in a shared building, there are steps you can take:

- **Check your building's energy performance** (via your EPC or an energy survey)
- **Talk to your landlord** – they may benefit from improvements, too
- **Subscribe to the Hertfordshire Growth Hub** to stay up to date on funding and support



Yet only 1.7% of employers are currently certified to deliver retrofit work.

The most in-demand retrofit roles include:

- Installers of insulation, windows, and low-carbon heating systems
- Retrofit assessors and coordinators
- Project managers, customer service, and finance professionals

You don't have to start from scratch. Many skills are transferable, and existing tradespeople may only need light-touch upskilling to meet new standards.

Getting Started

If you're a resident considering a career change: You may already have transferable skills – HOP can help you understand your next steps.

If you're a tradesperson or SME in construction: Retrofitting isn't a passing trend. With government policies like the phase-out of gas boilers by 2030, demand for green technologies is only going to grow.

If you're a business owner keen to improve your premises: Read the [Retrofit Guide](#) or visit [Hertfordshire Growth Hub](#) for business support or [HOP's Greener Homes Hub](#) for upskilling and training opportunities.

Local approaches drive growth locally

Local councils and partners are already delivering. A local collaboration between housing associations and local authorities delivered over £40million in local investment, with £14 million from government funding, matched by £25 million in local investment, to improve homes across the county. This included commitments to local skills development and social value – a model for how business, public sector and community partnerships can succeed. Retrofitting offers businesses the chance to cut costs, improve comfort, and show leadership in sustainability – while also strengthening Hertfordshire's green economy.

With strong local partnerships, clear guidance, and growing support, now's the time to explore how retrofitting could benefit your business – and how you can play a role in Hertfordshire's low carbon future.

- **Use the Retrofit Guide** although aimed at homeowners, it's full of ideas that apply to business premises

Retrofitting is particularly worth exploring if you're already planning renovations or facing high energy costs.

The Trades and Construction Opportunity

None of this happens without people – and Hertfordshire is scaling up to meet the demand. The Hertfordshire Opportunities Portal (HOP) has launched a Retrofit: Green Homes Hub to support residents and businesses in finding opportunities and building skills.

The scale of opportunity is significant:

- **482,900** homes need retrofitting by 2050 – that's 52 per day
- **59,800 retrofitters are needed** – around 2,300 trained professionals per year
- **£100m+** already secured to improve building stock
- The supply chain market could grow from £1.2bn to £36bn by 2030





Global Recycling Day 2025: Celebrating Award-Winning Sustainable Packaging Innovations

On Global Recycling Day 2025, Procter and Gamble celebrated commitment to superior packaging solutions that prioritise sustainability and accessibility. Their dedicated teams of designers and material scientists are continually innovating to create packaging that not only protects our products but also enhances the user experience.

Highlighting Award-Winning Sustainable Packaging Designs

From detergent to skincare, innovations are recognised for their sustainability and accessibility, earning recognition at the prestigious 2025 PAC Global Awards and WorldStar Global Packaging Awards.

Tide evo: Revolutionizing Laundry with Sustainable Packaging

In response to the demand for convenience and efficiency, Tide has introduced Tide evo, a groundbreaking laundry detergent in a tile form. This innovative design utilises minuscule fibres to deliver superior cleaning power without excess liquid or fillers. Packaged in Forest Stewardship Council™ certified recyclable paper, Tide evo eliminates the need for traditional plastic bottles, earning the "Best in Show" award in the Sustainable Package Design category at the 2025 PAC Global Awards.





Air Capsule eCommerce Package: Leading the Way in Sustainable Shipping

As e-commerce continues to expand, the need for effective packaging solutions grows. The Air Capsule shipping package is designed for maximum efficiency, starting as a flat envelope that is 25% more transport-efficient than conventional packaging. Upon use, it transforms into a waterproof, rigid 3D structure that is 40% lighter than standard shipping cases and is easily recyclable after auto-deflation. This innovative package was recognised as a WorldStar Global Packaging 2025 Winner in the E-Commerce category.

Olay Indulgent Moisture: Enhancing Accessibility in Shower Products

Recognising the challenges faced by individuals with visual impairments, Olay developed Indulgent Moisture, the first body wash featuring a tactile symbol for easy identification in the shower. This thoughtful design, complemented by clear and intuitive artwork, ensures accessibility and earned "Best in Class" in the Universal Design category at the 2025 PAC Global Awards.

Dawn Powerwash™ Dish Spray: Promoting Reusability and Recyclability

With a growing consumer focus on reducing waste, Dawn Powerwash™ Dish Spray offers a solution that combines convenience with sustainability. This spray-activated dish cleaner features a reusable spray trigger, which constitutes 65% of the packaging's plastic content. Customers can purchase refills, minimising waste while ensuring the trigger is now fully recyclable. Dawn Powerwash earned the "Award of Distinction" in the Sustainable Package Design category at the 2025 PAC Global Awards.

Head & Shoulders BARE: Reducing Plastic Footprint

Head & Shoulders has launched BARE, an anti-dandruff shampoo that meets the demand for minimalistic ingredients and a reduced plastic footprint. Its innovative "roll and squeeze" design allows consumers to extract every last drop, using 45% less plastic* than previous bottles. Crafted from a mono-material, BARE's packaging enhances recyclability, earning "Best in Class" at the 2025 PAC Global Awards and recognition as a WorldStar Global Packaging 2025 Winner in the Health and Personal Care category.

Product packaging delivers better experience for people with reduced environmental impact. For Global Recycling Day, Proctor and Gamble reflecting on what they've accomplished and where they will continue to focus as we help create a circular future where materials are recycled and remade instead of becoming waste.

The teams who design our products and packaging have a clear path ahead, guided by our consumers' needs and Ambition 2030 goals. They seek to design 100% of consumer packaging to be recyclable or reusable, and reduce our use of virgin petroleum resin by 50%* per unit of production by 2030.

Innovation, smart design and collaboration will keep us moving forward toward a circular future with less waste and more reuse.

What drives our people every day on this journey?

Proctor and Gamble believe they can unlock more worth from packaging materials long after their first use. They are focused on delivering impact at three levels:

- Reducing footprint
- Enabling people to reduce their footprint
- Helping industry reduce its footprint through solutions that are scalable and sustainable

In addition to designing the product packaging to be recyclable, here are examples of “reduce, reuse, replace, recycle” strategy, shared through products you may have at home.

Reduce — In the Shower

Not only did they reformulate Head and Shoulders shampoo to only include nine ingredients, they also reduced the bottle's plastic by 45%. What's more, people roll it up like a tube of toothpaste to get out all the product and create a more compact item in their recycling bin. Additionally, Herbal Essences has upgraded its line-up of shampoo and conditioner packaging to bottles with 25% less plastic than previous versions.

Reuse — In the Kitchen

Washing dishes is a chore that most people want done quickly and conveniently. The result lies in refillable packaging and a Dawn formulation designed to release suds without the need for water to activate them. Spray, Wipe, Rinse. Dawn Powerwash uses 25% post-consumer recycled plastic and allows people to refill and reuse the spray pump for future uses — all while delivering on a more effective clean without a sink full of water.

Replace — In the Bathroom

Proctor and Gamble swapped out plastic for recyclable cardboard in premium refillable Gillette and Venus packs.

The move reduces plastic waste while removing a key tension of the previous design — it was hard to open without scissors. Now, most of our razors are sold in this new package, held in with a strong and resilient pulp fibre tray that's made with Forest Stewardship Council™ certified paper. Ariel detergent pods now come in a cardboard box featuring an ergonomic opening for easy access as you start a load. The package eliminates

plastic and is made from 95% post-consumer recycled material.

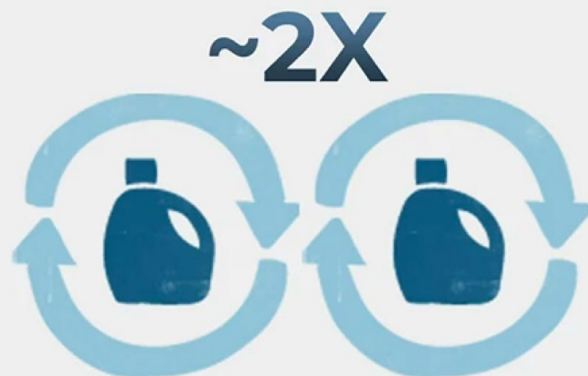
Recycle

Through all of this work, they continue to design packaging for recyclability and reuse, choosing materials that better enable our packaging to be captured at recycling facilities so they can be reprocessed and renewed. Engineers are inventing and licensing new recycling processes like VersoVita™ that improves the quality of recycled polypropylene content so more can be recycled. It's all part of the journey to close the loop and bring high-quality materials back into our supply chain.

Proctor and Gamble know it will take more than product and packaging changes to create a circular future. That's why they're working with global partners — Circulate Capital, Delterra, The Recycling Partnership and the Alliance to End Plastic Waste — who all support programs that increase the collection of materials, improve sorting at recycling facilities and enable innovation so less is wasted, more is recycled and more is reused.



In 2021/2022, we diverted
nearly 675,000 metric
tons of manufactured
waste from landfill
which is heavier than
66 EIFFEL TOWERS



We nearly doubled our use
of recycled plastic over the
past two years



**MAKE THE
BIGGEST
DIFFERENCE**

Today we are focused on the areas that are important



Siemens and Guofu Hydrogen partner to accelerate global green hydrogen production

The technology company Siemens, China-based Guofu Hydrogen, a leading supplier of integrated solutions for hydrogen energy, and RCT GH Hydrogen, a Germany-based supplier of hydrogen systems and services, have signed a Memorandum of Understanding (MoU) to collaborate on advancing the hydrogen value chain. The partnership marks a significant step forward in the global expansion of green hydrogen technology as it focuses on the development and manufacture of electrolyzers and green hydrogen production. The partnership marks a significant step forward in the global expansion of green

hydrogen technology. The agreement establishes Siemens as the preferred supplier and technology partner across the entire value chain of Guofu Hydrogen's expansion plans. The partnership focuses on three key areas: developing and engineering Guofu's electrolyzers and electrolyser systems, equipping new electrolyser manufacturing facilities starting in Germany, and developing, constructing, and operating new hydrogen production plants. RCT GH Hydrogen, as a technology partner, will lead the engineering, procurement, and construction of state-of-the-art hydrogen production facilities.

"This strategic partnership exemplifies Siemens' commitment to driving the industrialization of green hydrogen production," said Axel Lorenz, CEO of Process Automation at Siemens. "Our portfolio and domain expertise, combined with Guofu Hydrogen's vision and RCT GH Hydrogen's proven engineering capabilities, will help establish new standards in electrolyser manufacturing efficiency and scalability. Together, we're not just building factories – we're building the foundation for a sustainable hydrogen ecosystem that will play a crucial role in the global energy transition."

"Partnering with Siemens allows us to





Together, we're not just building factories, we're building the foundation for a sustainable hydrogen ecosystem that will play a crucial role in the global energy transition.

leverage world-class automation and digital capabilities," said Pinfang Wu, Board Chairman of Guofu Hydrogen. "This collaboration will significantly accelerate our expansion into global markets and strengthen our position as a leading provider of green hydrogen solutions. Together, we're creating a blueprint for the future of hydrogen production."

As a key contributor, RCT GH Hydrogen

will leverage its experience in hydrogen plant construction and systems integration to ensure that the electrolyser manufacturing facilities meet the highest efficiency and safety standards. "This collaboration enables us to set new benchmarks in hydrogen infrastructure development, contributing

significantly to the global decarbonization effort," said Prof. Dr. Peter Fath, CEO of RCT GH Hydrogen. "It also underscores RCT GH Hydrogen's pivotal role in shaping a sustainable hydrogen economy through advanced technologies and innovative solutions."

Siemens will be delivering products, solutions and services from across its Siemens Xcelerator portfolio, including

industrial automation and instrumentation. The deal also includes electrification and building technology, industrial communication, and cybersecurity solutions. Siemens is also contributing its wide range of digital services and software for the design, engineering, simulation, optimization and standardization of the entire hydrogen value chain, from electrolyser manufacturing to the operation of hydrogen plants.

Another key element of the collaboration is the development of a global hydrogen partner ecosystem that's bringing together suppliers, technology providers, and end-users to accelerate innovation and standardization across the industry. This ecosystem will be supported by the Siemens Xcelerator, the company's open digital business platform that enables seamless integration and collaboration throughout the value chain.



United Sustainable Flight Fund Invests in Heirloom to Scale Direct Air Capture

United has announced that the UAV Sustainable Flight Fund has made an investment in direct air capture (DAC) company Heirloom, adding Heirloom's measurable, quantifiable carbon reduction technology to its already robust portfolio of decarbonization strategies. The Fund also entered into an agreement for the right to purchase up to 500,000 tons of carbon dioxide removal (CDR) to be delivered for the production of sustainable aviation fuel or permanently stored underground. Heirloom's already-proven and scalable technology accelerates the natural power of limestone to capture CO₂ directly from the air – making it potentially one of the lowest cost pathways for removing carbon dioxide. "Carbon capture is one of our country's fastest growing, energy enabling pathways," said Andrew Chang, head of United Airlines Ventures. "At UAV, our primary focus is finding solutions for decarbonization that are profitable. Heirloom's technology aligns directly with this objective, offering a scalable and commercially viable approach

and complements United's commitment to net zero by 2050." "We are incredibly proud to welcome the United Sustainable Flight Fund as an investor and to work with them to scale our DAC technology," said Shashank Samala, CEO of Heirloom. "By utilising DAC as a dual-pronged tool that can both greatly reduce CO₂ emission from aviation fuel and remove residual emissions, we are charting a true path to Net Zero aviation." Heirloom marks United's third carbon capture investment but the first in a company commercializing direct air capture technology. DAC is one of two main forms of carbon capture utilisation and storage, along with point source capture. Unlike point source capture which captures CO₂ from a specific emitting source, like a power plant, DAC removes atmospheric CO₂. UAV Sustainable Flight Fund The UAV Sustainable Flight FundSM is a first-of-its-kind investment vehicle designed to leverage support from cross-industry businesses in order to support start-ups focused on decarbonizing air travel. The fund is comprised of more than \$200 million in

By utilising DAC as a dual-pronged tool that can both greatly reduce CO₂ emissions from aviation fuel and remove residual emissions, we are charting a true path to Net Zero aviation.

investment commitments from United and corporate partners including: Air Canada, Air New Zealand, Aircastle (a Marubeni & Mizuho Leasing Company), American Express Global Business Travel, Aviation Capital Group, Boeing, Boston Consulting Group, Embraer, GE Aerospace, Google, Groupe ADP, Hawaiian Airlines, HIS, Honeywell, JetBlue Ventures, Natixis Corporate & Investment Banking, Safran Corporate Ventures, and Technip Energies, among others. For more information about the fund, please visit the United Airlines Ventures website.



about the company is at www.united.com. United Airlines Holdings, Inc., the parent company of United Airlines, Inc., is traded on the Nasdaq under the symbol "UAL".

United Forward-Looking Statements and Other Important Information

This press release contains certain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 relating to, among other things, plans and projections regarding the company's environmental, social or governance (ESG) goals, targets, commitments, strategies and initiatives and related business and stakeholder impacts. All statements that are not statements of historical facts are, or may be deemed to be, forward-looking statements. Such forward-looking statements are based on historical performance and current expectations, estimates, forecasts and projections about our future financial results, plans, objectives, goals, targets, commitments, strategies and initiatives and involve inherent risks, assumptions and

statement can be guaranteed. Forward-looking statements in this press release should be evaluated together with the many risks and uncertainties that affect United's business and market, particularly those identified in the "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Risk Factors" sections in United's Annual Report on Form 10-K for the year ended December 31, 2023, as updated by our subsequent Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other filings with the Securities and Exchange Commission. Risks and uncertainties related to United's environmental compliance, climate commitments and climate strategy are further described in Part I, Item 1A. Risk Factors of United's Annual Report on Form 10-K for the fiscal year ended December 31, 2023 - "We are subject to many forms of environmental regulation and liability as well as risks associated with climate change and may incur substantial costs as a result. In

Heirloom's technology aligns directly with this objective, offering a scalable and commercially viable approach and complements United's commitment to net zero by 2050.

About Heirloom

Since its founding in 2020, Heirloom has become one of the world's leading DAC companies. In 2023, Heirloom began operating North America's first commercial DAC facility in Tracy, California. Heirloom is part of the team building Project Cypress — a Department of Energy supported DAC Hub, which is eligible for up to \$600 million in government funding, and which will bring large-scale carbon removal to Louisiana and create nearly 1,000 new jobs.

About United

At United, Good Leads The Way. With U.S. hubs in Chicago, Denver, Houston, Los Angeles, New York/Newark, San Francisco and Washington, D.C., United operates the most comprehensive global route network among North American carriers and is now the largest airline in the world as measured by available seat miles. For more about how to join the United team, please visit www.united.com/careers and more information

uncertainties, known or unknown, including internal or external factors that could delay, divert or change any of them, that are difficult to predict, may be beyond our control and could cause our future financial results, plans, objectives, goals, targets, commitments, strategies and initiatives to differ materially from those expressed in, or implied by, the statements. These risks, assumptions, uncertainties and other factors include, among others, any failure to meet stated ESG goals, targets, commitments, strategies and initiatives in the time frame expected or at all as a result of many factors, including changing societal, market, competitive, regulatory or stakeholder expectations; any delay or inability of United Airlines to realize the expected benefits of the investment; and any delay or failure of any technology to be fully developed or become functional or marketable or to serve the purpose for which it was designed. No forward-looking

addition, failure to achieve or demonstrate progress towards our climate goals may expose us to liability and reputational harm." The statements included in this press release are made only as of the date of this press release and except as otherwise required by applicable law or regulation, United Airlines undertakes no obligation to publicly update or revise any statement, whether as a result of new information, future events, changed circumstances or otherwise. In particular, United Airlines reserves the right to change, amend, supplement, or abandon some or all of the statements regarding goals, targets, commitments, strategies, initiatives, intentions and other statements from time to time without notice.

In addition, some of our disclosures in this press release are estimates or based on assumptions due to inherent measurement uncertainties.



BizCrunch

Looking to Buy or Sell a business?
BizCrunch has the data, you need to make that purchase or sale.

In an era characterised by seismic shifts in the global economic landscape, a remarkable phenomenon is unfolding, one that heralds the largest generational wealth transfer in history. As the sun sets on the careers of the baby-boomer generation, a new dawn beckons for the young, ambitious and visionary. At the heart of this transition lies the vibrant domain of Small and Medium-sized Enterprises (SMEs), where opportunity knocks louder than ever before.

A HISTORIC TRANSFER AWAITS

Picture this: over 75,000 companies in the UK alone, each a testament to the entrepreneurial spirit, boasting revenues north of £1,000,000. Their architects? A generation of business

"This burgeoning wave of entrepreneurs sees not just companies, but legacies ready for a new chapter"

owners now on the cusp of retirement. But this isn't a narrative confined to the British Isles. From the fjords of the Nordics to the vibrant markets of the USA, and the bustling economic landscapes of Germany and Australia, this trend paints a global

canvas. The baton is poised for passing, but the question looms – who will take the helm?

AN UNPREPARED LEGACY

A startling revelation by Wilmington Trust sheds light on a critical gap – almost 60% of these privately-owned bastions of industry lack a clear succession plan. The foundation of their life's work, their companies, remain without a formal valuation, an oversight that could lead to untold losses in potential and opportunity.

ENTREPRENEURSHIP THROUGH ACQUISITION: A NEW PARADIGM

Enter the bold and the brave, fuelled by the pioneering ethos of "Entrepreneurship Through Acquisition," a movement birthed in the hallowed halls of Harvard

Business School. This burgeoning wave of entrepreneurs sees not just companies, but legacies ready for a new chapter. They recognize the inherent value in established enterprises, where profitability, not just potential, shapes valuation. It's a shift from the ground-up approach, moving away from the venture capital frenzy to a more measured, value-driven investment in proven entities.

THE MISMATCHED MARKETPLACE

Yet, the journey is fraught with hurdles. According to insights from BizBuySell, a staggering 80% of businesses listed for sale find no buyer, a testament to the chasm between seller expectations and market realities. Often, inflated valuations, spurred by overzealous brokers, derail potential deals, leaving businesses in limbo.

BIZCRUNCH: THE BEACON FOR ASPIRING ACQUIRERS

In this landscape of untapped potential and navigational challenges, BizCrunch emerges as a lighthouse for the intrepid acquirer. With its vast repository of data on millions of companies, BizCrunch.

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[CLICK HERE](#) to try BizCrunch

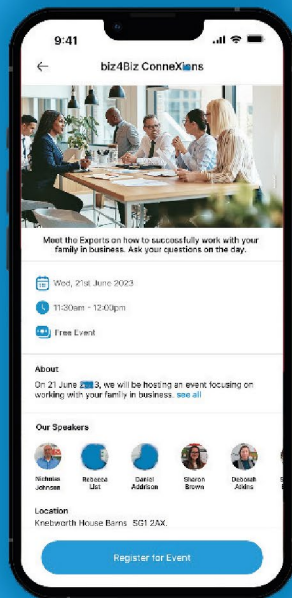
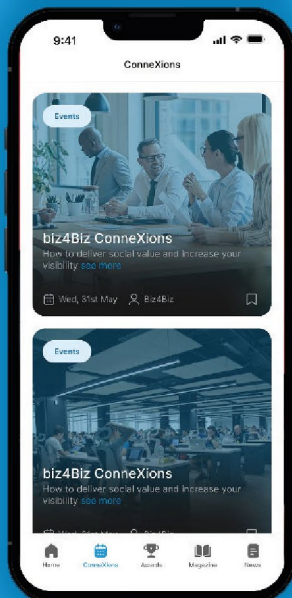
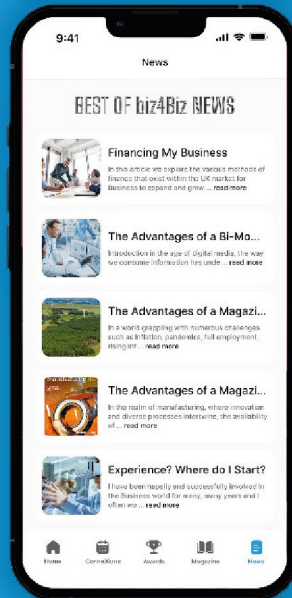
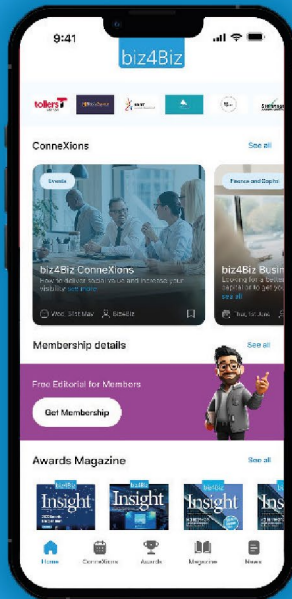


A video player interface for BizCrunch. On the left, a man in a black polo shirt is speaking. On the right, a laptop displays the BizCrunch website. The website has the BizCrunch logo at the top, followed by the text "The Smart Way to Discover Next M&A Deal". Below this, there is a description of the platform and a "Start for free" button. The video player has a play button in the center, a progress bar at the bottom, and a volume icon on the right. On the far right of the video player, there are four social media icons: a heart, a clock, a stack of papers, and a magnifying glass.

biz4Biz

THE NEW BIZ4BIZ APP IS NOW AVAILABLE FOR YOU TO DOWNLOAD!

The app offers a number of exciting features with networking at its heart, allowing you to build meaningful connections with like-minded individuals and businesses within our vibrant community. We are also renowned for our variety of curated magazines which each offer a unique perspective on topics ranging from business to lifestyle. You can use the app to explore Insight, Sustainable Biz and Manufacturing Biz and see these stories and this rich multi-media experience come to life. The app also moves you closer to a wide range of biz4biz events and not only offers seamless registration but allows you to manage your attendance and access full event details from one centralised platform. While making sure you never miss any of our must-attend events, the app also ensures that you completely maximise all of our exclusive membership packages and fully benefit from all of our enhanced features. Finally, as you would expect from a cutting edge organisation, we also keep you informed instantly, allowing you to access the latest news and breaking stories in the region and around the world.



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