

LONDON TECH WEEK

°ClimateTech 2021

Innovation Snapshot

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ClimateTech

ClimateTech is the new community launched out of Founders Forum, in partnership with London Tech Week. ClimateTech brings together the leading climate technology founders, climate investors and thought leaders through a series of events, conferences and roundtables. On September 21st, ClimateTech will host a full-day conference at London Tech Week covering everything from the future of biotech and the latest nuclear technology to carbon removal solutions and cell-based foods.

LEARN MORE: londontechweek.com/events/climatetech
CONTACT: stephen@climate-tech.co



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INTRODUCTION

The world has just 10 years to halve greenhouse gas emissions to avoid the most dangerous impacts of climate change. To achieve this, every sector of the global economy needs to transform in just two business investment cycles.

The tech industry has huge potential to harness the creativity and immense problem-solving ability of our sector to tackle climate change and grow profitable businesses at the same time.

While we may have many of the fundamental tools to fight the worst impacts of climate change, innovation has a crucial role to play in supporting the pathway to net zero, providing insights to enable us to take the right path, and in discovering new, more effective ways to manage the transition.

This is evident in recent market developments. After decades of languishing as a niche area, the climate tech sector has emerged as a major area of business. Tech unicorns such as Octopus, Nest and Tesla are showing that disruptive climate tech companies can also become billion-dollar brands.

Investment in the sector is growing rapidly. Analysis by PwC found that since 2013 we have seen a 3750 per cent — yes, over three thousand per cent! — increase in global venture funding in the climate tech market, to $16.1 billion in 2019 – three times the growth rate of VC investment into AI over the same period.



And this will undoubtedly accelerate. Governments, investors, and global firms are increasingly pledging to transition to net zero. They in turn are investing in and supporting climate innovations and the innovators who can support them in achieving those commitments.

Climate change is the ultimate disruptor. Innovators and startups, such as those featured in this report, can use it to harness innovation, expand into new markets as sectors transform, or help to rewire the basis of existing ones, and in turn, become the next tech unicorns that will help us in the fight against the climate crisis.

— Julian David, CEO, techUK



INNOVATION THAT MATTERS

Despite the ongoing disruption caused by the COVID pandemic, we at Springwise continue to take inspiration from the positive innovation we see on a daily basis. Some of the most exciting solutions deal with climate technology, and some great examples are in the pages that follow.

But first, a few words about what we do. Springwise is the global innovation intelligence platform for positive and sustainable change, providing foresight into the most innovative thinking and ideas on the planet. We are the place of record for innovation that matters. With access to an ever-expanding network of 11,000+ global solutions, we're trusted by thousands of thought-leaders, entrepreneurs, investors, educators and tech disruptors as the leading source of business ideas that inspire and empower.

Along with our parent company Re_Set, a next-generation strategy consultancy based in London, we are also a proud Certified B Corporation and members of 1% for the Planet. This connects us to some of the most environmentally concerned organisations across the globe.

In a world that is so often a maelstrom of conflict and confusion, innovation and collaboration have never had a greater role in ensuring the survival of future generations. This is why we have proudly compiled this report on behalf of our friends at London Tech Week — highlighting just a few of the brilliant startups meeting the urgency of the moment with creative business solutions.

We hope you find these case studies in purpose-driven innovation not only informative but as a source of inspiration and optimism as well.

— Justin Sablich, Editor, Springwise



WHAT
Animal-free dairy products

WHO
Better Dairy

WHERE
United Kingdom

CONTACT
www.betterdairy.co.uk
info@betterdairy.co.uk

[Image: Andy Kelly on Unsplash]

PRECISION FERMENTATION CREATES DAIRY PRODUCTS IN THE LAB

Better Dairy is using precision fermentation to create dairy products that do not involve cows

The UK startup Better Dairy is using precision fermentation to remove animals from the food chain, creating dairy products that are molecularly identical to traditional dairy products but without involving the cow. But this is not your average vegan cheese made from plants — the precision fermentation process uses yeast to create the individual molecular constituents of milk in different vats and then blends them together to achieve the exact composition of milk. A very similar process has already been used to produce rennet and insulin.

The company's founders, Jevan Nagarajah and Dr Christopher Reynolds, are both alumni of Imperial College London. They paired up as part of the incubator Entrepreneur First's company builder programme. While their initial plan is to create better quality animal-free dairy products, their final goal is nothing short of disrupting the entire dairy supply chain and "create a world where humans are vegan without even realising it", as Nagarajah told Tech Crunch.

To start, they are focusing first on dairy proteins – which are used on their own as ingredients in thousands of commercial products. This could allow the company to start earning revenue even before they have a complete finished dairy product to market to consumers.

TAKEAWAY: Traditional dairy farming emits an esitmated 1.7 billion tonnes of CO2 into the atmosphere each year. On top of this, it takes 650 litres of water to produce just 1 litre of milk – and that is before considering the issues of animal welfare, waste management and deforestation are considered. At the same time, dairy is relatively low-cost, which means that fermentation companies will need to achieve a very high level of efficiency in order to make a profit. This may be why Better Dairy has opted to focus first on producing commercial products such as proteins.



WHAT
Lab-grown meat for the masses

WHO
Ivy Farm Technologies

WHERE
United Kingdom

CONTACT
www.ivy.farm
info@ivy.farm

[Image: Ivy Farm Technologies]

CULTURED MEAT COULD BE ON UK SUPERMARKET SHELVES BY 2023

Ivy Farm's meat is not genetically modified and is created by multiplying cells from organically raised animals

Ivy Farm Technologies is developing lab-grown beef and pork with a goal to have products available for retail sales by 2023. The Oxford University-based company was started by two alumni in 2019. Seeking healthy meats with no additives or preservatives and without the guilt of contributing to environmental damage, the founders decided to create their own. With patents pending in 12 countries, the company plans to offer pork sausages, Angus beef burgers and Wagyu meatballs as the first options.

The meat is not genetically modified and is created by multiplying cells from organically raised animals. The company's roll-out plans begin with licensing its technology for sale to other businesses, followed by sales to food producers of cultured muscle and fat.

By 2022, the organisation hopes to open an on-site restaurant before beginning to supply commercial retailers with meat products sometime in 2023. Oxford University contributed seed funding to the business and is part of the board of directors.

TAKEAWAY: Bioengineering is an exciting space, with innovations in materials science seeking ever more resilient ways to create products as close to carbon negative as possible. Lab-grown leathers are becoming more diverse — now being made from a variety of plants, including mycelium and cactus. Conscious luxury, too, is growing, with products such as lab-grown diamonds becoming more popular. And many renowned designers are starting to advertise their green credentials, including explicit use of upcycling in recent collections. Perhaps one day, the cache of providence will be located in items that have been certifiably reused and upcycled many times.



WHAT
AI-powered air quality platform

WHO
Airly

WHERE
Poland

CONTACT
www.airly.org
contact@airly.org

[Image: Airly]

AI-POWERED PLATFORM DELIVERS REAL-TIME AIR QUALITY DATA

Airly aims to address the air quality health crisis with a platform that provides real-time, hyper-local reports

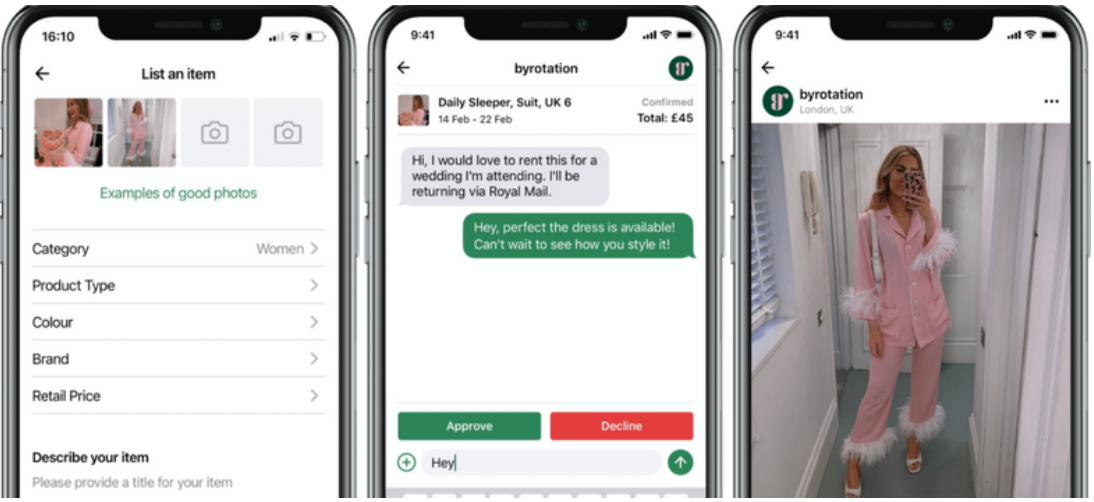
The Polish clean-tech startup Airly developed an AI-powered air quality platform that allows for global access to current and historical air quality data. Airly's services consist of supplying its customers with enough sensors to provide real-time, hyper-local reports on air quality.

To measure key pollutants, a laser is used for particulate matter (PM1, PM2.5, PM10) and an electrochemical method for NO2, O3, SO2 and CO gases. Collaboration with mobility companies is also taking place to use sensor-equipped cars and scooters for even better air-quality tracking.

Over 600 local governments and cities across Asia and Europe already use Airly, and the company will soon open offices in the UK and US. According to Forbes, there used to be only one sensor monitoring pollution in the city of Jakarta. Now, thanks to Airly, there are 100.

Airly recently raised €3.3 million in a funding round to scale up its solution. "Polluted air is a plague on our health – it's like a pandemic in slow motion. Improving air quality needs to be at the core of the world's post-pandemic rebuild and Airly is the first step to pollution-free cities," Airly's CEO and co-founder Wiktor Warchałowski said.

TAKEAWAY: A study published this year in Environmental Research revealed that over 10 million people die from air pollution yearly. Other research suggests that this is far more than the (not so small) 2.6 million people who have died from COVID-19. Airly also found a significant correlation between air-borne particulate matter and deaths per capita related to COVID-19. Given that 62 per cent of the world's governments lack real-time data about air quality, the growth of Airly's solution is much needed and could help governments start to address air pollution more effectively.



WHAT
Fashion rental platform pushes boundaries

WHO
By Rotation

WHERE
United Kingdom

CONTACT
www.byrotation.com
hello@byrotation.com

[Image: By Rotation]

RENTAL APP'S POP-UP STORE PUSHES BACK AGAINST FAST FASHION

By Rotation recently opened a physical pop-up to encourage more people to consider second-hand clothing

The fashion rental app By Rotation began in 2019 after founder Eshita Kabra-Davies witnessed the first-hand effects of textile waste while on her honeymoon in Rajasthan, India. The app allows users to rent out their own wardrobes and has more than 70,000 users. By Rotation recently brought its concept into the real world with a physical pop-up at the Westfield London shopping centre

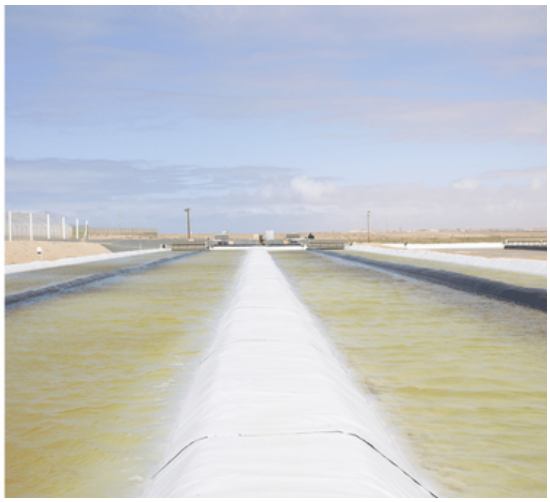
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The two-week pop-up occupied a 3,300 square-foot space and showcased the top fashion rental item from the app. Fans could rent fashion items and accessories from brands such as The Vampire's Wife, Rixo and Ganni – some for as little as £3 a day. The space was designed to resemble a flat, and also included rentable furniture and homewares from Studio Arva.

In addition to rentals, the pop-up also hosted masterclasses in techniques for both more sustainable and more stylish lifestyles. Classes included instruction in making flower crowns and table-scaping. Earlier this year, By Rotation also teamed up with London's Page8 Hotel to offer guests a clothing rental concierge. The service allowed guests to order items from a tailored lookbook to be delivered straight to their room, arriving in under 90 minutes or less.

TAKEAWAY: According to a 2019 survey, Brits, on average, spend £700 million each summer on holiday clothes that are worn only on holiday and thrown away and roughly £800 million a year on wedding outfits that are worn just once and then shoved in the back of the closet. And that's just Britain. Apps like By Rotation can help to change this throwaway, fast fashion culture, while at the same time allowing people to earn a bit of extra money. For renters, this is a great way to wear a new dress or suit at every party – without wasting either money or the environment. It's a win-win, which may be one reason why it is such a popular concept.





WHAT
Process for growing algae anywhere in the world

WHO
Susewi

WHERE
United Kingdom

CONTACT
www.susewi.life
info@susewi.life

[Image: Susewi]

MASS PRODUCING ALGAE, NO MATTER THE ENVIRONMENT

Susewi's algae-production process has proven successful in extreme heat as well as cold and rainy environments

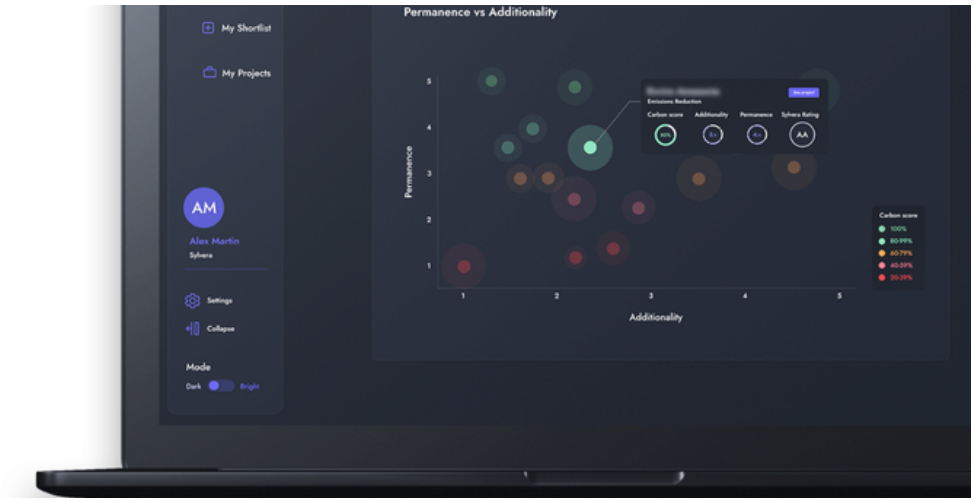
The UK-based Susewi can grow mass quantities of algae by only relying on seawater, the sun and wind, allowing it to produce alternative protein in regions that where it would otherwise be impossible, such as desert climates. The algae are then harvested, desalted and dried into a meal that can be incorporated into products like fish feed.

Susewi's process can recreate natural algal blooms minus the freshwater that would normally be needed. Each strain begins in a laboratory environment before moving to a greenhouse environment. After a period of cultivation, it ends up in one of Susewi's outdoor ponds, where nature takes over to bring the algae to its final bloom state.

"We have shown that the process is successful in all climates and across all the seasons, from the rain and cold of a South African winter to the 50-degree heat of a desert summer," Keith Coleman, Susewi's founding CEO, told the Advocate.

Since 2013, SuSeWi has grown into a production facility that boasts the world's largest algae growth pond, located in the coastal desert of Morocco. The ultimate aim is to be the world's largest algal producer.

TAKEAWAY: As algae's many beneficial properties continue to become more known, the ability to produce it on a mass scale, anywhere in the world, shows clear game-changing potential. Beyond sustainable food and materials, algae are also seen as a key tool for other solutions that can combat climate change. It can sequester carbon when used with AI-powered bioreactors and be a key component of biofuel.



WHAT
Platform improves accuracy and transparency of carbon offsetting

WHO
Sylvera

WHERE
United Kingdom

CONTACT
www.sylvera.com

[Image: Sylvera]

A CARBON-OFFSETTING PLATFORM THAT IMPROVES TRANSPARENCY

Sylvera works by applying machine learning to satellite data from a variety of sources

The Sylvera platform aims to make the process of offsetting carbon more accurate and transparent for businesses and organisations. Using machine learning and satellite data from a variety of sources, Sylvera provides a more accurate analysis of carbon levels from different offsetting projects.

Sylvera rates offsetting projects using a similar system as credit scoring, where scores are given from AAA (good) to D (bad). Scores are determined using the carbon performance of the project as well as the potential risks to the project. The platform also allows businesses to see ratings from a range of projects, to compare their relative efficiency.

Because Sylvera measures a variety of metrics, including raw carbon performance, permanence, co-benefits and risk, it offers a more effective and transparent model for measuring the levels of carbon that are actually offset. This is important because the carbon offset market may be on the brink of a major boom. According to the Taskforce on Scaling Voluntary Carbon Markets, the offsetting market is poised to grow 15-fold by 2030. This is likely why Sylvera was able to raise $7.8 million in its recent seed round.

TAKEAWAY: Carbon offsetting — essentially paying for others to reduce emissions or absorb CO_2 to compensate for your own emissions — sometimes gets a bad rep. This is because it doesn't always seem to have a real impact, except as a form of greenwashing. There are many reasons for this, but the main ones are that it is very difficult to measure the exact reductions of individual projects and the process often lacks transparency. Sylvera hopes to change this.

ClimateTech Innovation Snapshot

This report was compiled on behalf of London Tech Week by the Springwise editorial team.

Designed & Edited By:
Justin Sablich, Editor

Additional Writing & Research:
Lisa Magloff, Writer
Keely Khoury, Writer
Katrina Lane, Writer

Questions?
info@springwise.com

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ABOUT LONDON TECH WEEK

London Tech Week provides the tech eco-system with a platform to come together to drive change. Our mission is to build a better, more inclusive, digital world by gathering the world's most inspirational founders, global leaders, senior investors and rising stars to collaborate and discuss the vital role of technology on society.

Free registration for this year's event at:
www.londontechweek.com

ABOUT SPRINGWISE

Springwise is the global innovation intelligence platform for positive and sustainable change, providing foresight into the most innovative thinking on the planet. With access to a growing database of 11,000+ global solutions, we're trusted by thousands of thought-leaders, entrepreneurs, investors and tech disruptors as the leading source of business ideas that inspire and empower.

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