



By: *Elise Quevedo*

# 5 Sustainable Tech Innovations Making a Big Impact on a Greener Future



As we enter 2025, the world is at a crossroads of necessity and opportunity. Climate change demands immediate action, and the tech industry is stepping up unprecedentedly.

During this year's Davos **summit**, which will take place from January 20 to 24, global leaders, innovators, and policymakers will converge to spotlight green technology as a central pillar in combating the climate crisis.

This year, discussions will underscore the urgency of scaling sustainable innovations and the critical role of public-private partnerships in driving meaningful change.

As someone embedded in the tech ecosystem, I've had the privilege of observing ground-breaking green technologies. Today, I want to share five innovations making headlines and reshaping our future.

## Advanced Energy Storage: The Power of Solid-State Batteries

One of the most transformative advancements in the energy sector in 2025 is the rise of solid-state batteries.

**Solid Power**, for example, recently expanded its collaboration with the Ford Motor Company and is a leading innovator in creating batteries capable of storing 50% more energy than lithium-ion batteries.

Solid-state batteries are now incorporated into renewable energy grids, offering dependable storage solutions to supply and demand more efficiently.

But what sets this innovation apart? Its potential to reduce reliance on rare earth metals and improve recyclability, which, in turn, addresses two critical challenges in the energy sector.

Solid-state batteries are becoming, or I should better say have already become, a cornerstone of the green energy revolution, with major automakers and energy providers investing

heavily in this technology.

## Solar Windows: Transparent Powerhouses

Renewable energy is not just wind turbines and rooftop solar panels anymore. This year, we will see the rise of solar windows, transparent surfaces that double as energy generators.

Imagine skyscrapers covered in glass that not only lets in light but also harnesses it to generate electricity. It is no longer something out of a sci-fi film or something you hear on the Davos floor as a great idea; it is reality.

Companies like **Lumos Solar** have developed photovoltaic (PV) materials that integrate into window panes without sacrificing transparency.



*Solar windows could offset a significant portion of urban energy demand, reducing reliance on fossil fuels and cutting greenhouse gas emissions*

Their adoption is skyrocketing because these solar windows have a higher energy conversion efficiency. Entire buildings are retrofitted with this technology, transforming them into vertical power plants.

The implications are enormous. Solar windows could offset a significant portion of urban energy demand, reducing reliance on fossil fuels and cutting greenhouse gas emissions. The return on investment is equally compelling for businesses, as energy costs plummet while property values soar.

## Direct Air Capture: Revolutionising Carbon Removal

Solar and wind energy dominate the renewable space, but did you know addressing the existing carbon dioxide in the atmosphere is equally critical? Meet direct air capture (DAC), a cutting-edge technology that actively removes CO2 from the air.

Companies like **Carbon Clean** are leading the charge, deploying large-scale DAC units capable of capturing thousands of tonnes of CO2 annually. These systems use advanced filters and renewable energy to separate CO2 from the air.

Countries like Iceland and Canada are already leveraging DAC to meet their ambitious net-zero goals, integrating the captured CO2 into products like synthetic fuels and building materials.

This technology is just one example of innovation's ability to turn environmental challenges into opportunities for sustainable growth.

## Reflect Orbital: Harnessing Solar Power from Space

Reflect Orbital's space-based solar power system is one of the most ambitious green **technologies** that has caught my eye. Founded by two young entrepreneurs (featured in Forbes 30 under 30), this ground-breaking approach involves capturing solar energy directly in space, where sunlight is uninterrupted by atmospheric interference or weather conditions.

The collected energy then transmits wirelessly to Earth using high-frequency microwaves. Reflect Orbital's prototype satellites have demonstrated better energy transfer efficiency, and the technology is being scaled to power remote and energy-starved regions.

By eliminating land-use conflicts and achieving consistent energy production, space-based solar power holds the potential to complement terrestrial renewable energy systems.

We need to use all resources available, and this is a perfect example of how to do it. Recognising its ability to provide a sustainable energy source that could revolutionise how we power our world, governments and enterprises are finally investing more in this technology.

## Vertical Farming: Feeding Cities Sustainably

Another revolutionary green technology reshaping our world is vertical farming. In the quest for sustainable agriculture, Denmark-based **Nordic Harvest** is an example of leading the way with its advanced vertical farming operations.

Nordic Harvest's facilities use state-of-the-art LED technology and renewable energy to grow leafy greens, herbs, and other crops year-round without soil and pesticides. By using less water, Nordic Harvest has set new innovative standards for efficiency and sustainability.



*The farms are now powered entirely by renewable energy*

Did you know their farms are now powered entirely by renewable energy, which in turn emphasises their commitment to green practices?

The company has already expanded its

operations across Europe, bringing fresh, locally grown produce to urban centres while addressing critical issues like food security and climate change. I expect to see more countries adopting these practices.

## The Future

I look forward to seeing more governments, corporations, and research institutions joining forces to scale these technologies across the world. Turning ideas into reality, not something we only see on paper.

Initiatives like the [GreenTech Alliance](#) are fostering cross-industry partnerships, ensuring that the benefits of sustainable tech reach everyone, even the most underserved regions.

One thing is certain: sustainability is no longer a luxury but a necessity. These technologies prove we don't have to choose between economic growth and environmental stewardship. By investing in green tech, we're building a future where innovation drives prosperity and sustainability.

**The greener future we envision is one we're collectively building, one innovation at a time**

We face a few challenges ahead because scaling these technologies to meet global demand requires significant investment and policy support, which we still lack.

Let's not slow down now and continue championing sustainable tech, invest in research and development, and push for policies prioritising our planet.

After all, the greener future we envision is one we're collectively building, one innovation at a time. No matter how small you think your contribution is, it matters and helps make an impact.

I will keep you informed as green technologies

advance during 2025.

Elise Quevedo is an author, speaker, analyst, and storyteller. Ranked among the Top 2% most viewed profiles on Linked In and recently named Top 50 Women in Tech Influencers She often writes for digital publications and collaborates with Fortune 500 companies as a global thought leader. Also known as "The Digital Ghost Queen" for her behind-the-scenes work, including ghostwriting, she has inspired audiences as a keynote speaker around the globe at events. She is the author of "Creating a Kick-Ass Attitude," where she shares her passion for having a positive attitude and always moving forward no matter what happens. As a Global Thought Leader, she enjoys collaborating with brands, attending events, and sharing her independent views. On a personal note, Elise is a globetrotter who loves discovering new cultures and people and having thrilling adventures experiencing what the world has to offer.