



Challenge accepted: Tech solutions in the battle against climate change

These tech startups are leading the way to a sustainable future.



Climate change, and its dire consequences, are [no longer up for debate](#). It's happening, right now, all around us. Without taking immediate action to move away from the use of fossil fuels, the earth's temperature will continue to increase, creating a massive and devastating transformation in the way we live due to extreme weather, rising sea levels, and melting glaciers.

It's a scenario everyone wants to avoid, which is why the UN committee on climate change has declared 2030 as the deadline for cutting carbon emissions in half and 2050 as the year the world needs to reach net zero emissions. To meet this critical goal, some of the world's best and brightest have been working on innovative climate tech solutions, and their ideas are generating plenty of interest. In 2021, over \$40 billion was invested in climate tech startups — [PWC](#) identified over 3,000 of them last year — and 2022 has already seen \$19 billion poured into this quickly emerging sector.



Strategies old and new

Although the task at hand may seem daunting, experts have pointed to a handful of potent strategies that will lead the way in combating climate change. One of the newer ones is carbon removal, which is exactly what Swiss startup [ClimeWorks](#) is doing by using a technology known as direct air capture to filter out CO2 from the atmosphere and then store it underground.

Another weapon in the fight against climate change is renewable energy, which has always been vital to reducing our reliance on fossil fuels. Aliya Bagewadi, founder of Avni Partners, a sustainability and strategy consultancy, is currently working with renewable tech startup [Allume Energy](#) and their innovative product SolShare, the world's first hardware that connects apartment tenants to a shared system of rooftop solar.

"Solar offers an opportunity to democratize clean energy. You can own a solar panel, I can own a solar panel. And, we can reduce our energy bills. It's not only helping us transition to a decarbonized energy source, but it can do so in a way that is accessible to the likes of everyday people," says Bagewadi.

The transportation and handling of wasted food is another major contributor to climate change. According to the [USDA](#), annual food loss and waste in the US annually reaches an amount equal to the CO2 emissions of 42 coal-fired power plants, and this doesn't include the large amount of methane emissions created by food that rots in landfills — which happens to be the most common item sent to landfills in the US.



That's why it's important that companies like [Apeel](#) are sprouting up. This food waste prevention company has created a plant-based, edible coating that retains moisture and slows oxidation of fruits and vegetables to prolong their freshness at grocery stores. Apeel claims that in 2021 its products prevented 33 million pieces of fruit from going to waste at grocery stores, avoiding the release of 7,300 metric tons of greenhouse gas emissions and conserving 1.5 billion liters

of water (or 610 Olympic-sized pools).

And then there's [Glanris](#), a startup that invented a process to transform rice husks — the world's largest agricultural waste product — into sustainable water filtration equipment, resulting in a triple win: this avoids the release of billions of pounds of CO2 from burning the husks, removes the need to use microplastics in water filters, and reduces energy consumption in the filtration process.

Targeting industrial processes

Within the industrial sector, which is responsible for 33% of global greenhouse gas emissions, the largest emitters of CO2 are cement, steel, ammonia, and ethylene, together accounting for 15% of all anthropogenic emissions.

Climate technologist and entrepreneur Dr. Yet-Ming Chiang explains that "the industrial processes we use to make these essential materials and chemicals were invented 100 to 200 years ago, and each is based on fossil fuels. We need to re-invent these enablers of modern society with new, decarbonized processes that will serve us for the next 100 years."

To this end, Chiang has established several climate tech unicorns, including [Sublime Systems](#), which is working to decarbonize cement production via electrochemistry, and [Form Energy](#), a low cost energy storage company — a concept that Chiang sees much promise in.



"The need for long-duration [energy] storage is much better understood and appreciated now than when we first started working on it five years ago. And whenever I think we're out of novel ideas for battery storage, something new always pops up," Chiang says. "Change at the scale needed will require more than just technology, but first the technology has to work."



[BACK TO SERIES](#)
[HOMEPAGE](#)

[Read more in this series](#)

[VIEW ALL »](#)