# XPRIZE winners reveal diverse pathways to scale carbon removal and boost economies



The global challenge of climate change has spurred innovative solutions for carbon removal, highlighted by the recent $100 million XPRIZE Carbon Removal competition. This initiative, launched in 2021 and concluding in 2025, illustrates a sweeping global response to the pressing need for effective strategies to clean the atmosphere and oceans of excess carbon dioxide. In a landscape where single-pathway solutions have often dominated discourse, the XPRIZE winners underscore the significance of diverse methods that not only confront climate issues but also create economic opportunities.

Among the notable victors is Mati Carbon, which secured the grand prize of $50 million for its enhanced rock weathering method. This ingenious approach involves applying finely crushed basalt to agricultural lands in India. The process accelerates natural weathering, effectively sequestering atmospheric CO₂ while concurrently improving soil health and crop yields for smallholder farmers. Speaking at the announcement event, representatives from Mati Carbon emphasised their commitment to sustainability, noting that their operations deliver significant economic benefits without imposing additional costs on farmers, transforming their agricultural practices and livelihoods in the process.

Vaulted Deep and UNDO also made impressive strides, securing runner-up positions. Vaulted Deep’s solution involves injecting organic waste—specifically, materials like biosolids and paper mill sludge—deep into geological formations, thereby both managing difficult waste streams and facilitating permanent carbon storage. This approach not only helps address waste management challenges but also stands as a beacon for job creation and economic investment within local communities, particularly in the U.S. Great Plains region.

In a contrast that speaks to the flexibility of carbon removal strategies, UNDO focuses on regenerative agriculture. Their model employs a decentralized approach, spreading crushed basalt and wollastonite across farmlands primarily in the UK and Canada. By locking carbon into stable minerals while enriching soil, UNDO's method enhances crop yields and is supported by partnerships with academic institutions and corporations, paving the way for innovative financing models. Their efforts reflect a nuanced understanding of local ecosystems and emphasize collaboration to build resilient agricultural communities.

Another noteworthy winner is Planetary, which has pioneered a method to enhance ocean alkalinity. This solution enriches seawater with alkaline minerals, thereby boosting the ocean's natural ability to absorb carbon. Planetary's projects, particularly those undertaken in conjunction with local and Indigenous communities in Nova Scotia, exemplify the integration of technology with traditional ecological knowledge. This model not only aims to improve carbon absorption but also celebrates local stewardship and economic opportunities, further demonstrating that climate solutions are most effective when they are equitable and rooted in community engagement.

The diverse array of strategies presented by these winners reflects a broader understanding within the climate community that no single pathway can address the complexities of carbon removal. The XPRIZE journey has involved over 1,300 teams globally, highlighting the importance of localised solutions tailored to specific environmental contexts. For instance, while enhanced weathering in agricultural settings may thrive in tropical regions, methods suited for industrial corridors might necessitate totally different approaches.

As the urgency for climate action accelerates, these varied strategies illustrate the real potential for scaling carbon removal. The challenges ahead may be daunting, but by fostering innovation across a handful of distinct yet complementary pathways, it’s possible not only to work towards reaching net-zero emissions but also to catalyse economic rejuvenation and ecological restoration. The message is clear: the future of carbon removal is not a singular journey but a robust, multifaceted effort that requires collective action and diversity in approaches.

Collectively, the breakthroughs showcased by the XPRIZE winners reveal an optimistic horizon for climate action—a future that embraces flexibility, inclusion, and the overarching ethos of shared benefits for communities worldwide.

## Reference Map:

* Paragraph 1 – [[1]](https://carbonherald.com/scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners/?utm_source=rss&utm_medium=rss&utm_campaign=scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners), [[2]](https://www.xprize.org/prizes/carbonremoval)
* Paragraph 2 – [[1]](https://carbonherald.com/scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners/?utm_source=rss&utm_medium=rss&utm_campaign=scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners), [[4]](https://apnews.com/article/31d41e402fd5386bd564d7145e84e9db)
* Paragraph 3 – [[1]](https://carbonherald.com/scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners/?utm_source=rss&utm_medium=rss&utm_campaign=scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners), [[3]](https://www.xprize.org/prizes/carbonremoval/articles/xprize-makes-history-awards-100m-prize-for-groundbreaking-carbon-removal-solutions), [[5]](https://www.forbes.com/sites/phildeluna/2025/04/23/carbon-removed-how-xprize-winners-aim-to-reshape-the-climate/)
* Paragraph 4 – [[1]](https://carbonherald.com/scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners/?utm_source=rss&utm_medium=rss&utm_campaign=scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners), [[6]](https://climateinsider.com/2025/04/24/xprize-awards-100-million-for-carbon-removal-solutions/)
* Paragraph 5 – [[1]](https://carbonherald.com/scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners/?utm_source=rss&utm_medium=rss&utm_campaign=scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners), [[7]](https://houston.innovationmap.com/xprize-winners-mati-carbon-2671866679.html)
* Paragraph 6 – [[1]](https://carbonherald.com/scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners/?utm_source=rss&utm_medium=rss&utm_campaign=scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners), [[3]](https://www.xprize.org/prizes/carbonremoval/articles/xprize-makes-history-awards-100m-prize-for-groundbreaking-carbon-removal-solutions), [[2]](https://www.xprize.org/prizes/carbonremoval)
* Paragraph 7 – [[1]](https://carbonherald.com/scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners/?utm_source=rss&utm_medium=rss&utm_campaign=scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners), [[3]](https://www.xprize.org/prizes/carbonremoval/articles/xprize-makes-history-awards-100m-prize-for-groundbreaking-carbon-removal-solutions), [[5]](https://www.forbes.com/sites/phildeluna/2025/04/23/carbon-removed-how-xprize-winners-aim-to-reshape-the-climate/)

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## Bibliography

1. <https://carbonherald.com/scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners/?utm_source=rss&utm_medium=rss&utm_campaign=scaling-carbon-removal-through-many-pathways-lessons-from-the-xprize-winners> - Please view link - unable to able to access data
2. <https://www.xprize.org/prizes/carbonremoval> - The XPRIZE Carbon Removal competition, launched on Earth Day 2021 and concluding during Earth Week 2025, offered a $100 million prize to accelerate scalable solutions for removing carbon dioxide from the atmosphere and oceans. The grand prize of $50 million was awarded to Mati Carbon for their enhanced rock weathering solution, which applies finely crushed basalt over agricultural lands in India to accelerate a natural weathering process that permanently draws down atmospheric CO₂. This approach not only removes CO₂ but also improves soil health and increases crop yields for smallholder farmers. Runner-up teams included NetZero, Vaulted Deep, and UNDO Carbon, each recognized for their innovative carbon removal demonstrations. XFACTOR awards were given to Planetary and Project Hajar for their advancements in ocean and air carbon removal technologies, respectively. The competition highlighted the importance of diverse approaches to carbon removal, emphasizing that no single pathway can achieve net-zero emissions on its own. ([xprize.org](https://www.xprize.org/prizes/carbonremoval?utm_source=openai))
3. <https://www.xprize.org/prizes/carbonremoval/articles/xprize-makes-history-awards-100m-prize-for-groundbreaking-carbon-removal-solutions> - XPRIZE, in partnership with the Musk Foundation, announced the winners of its $100 million Carbon Removal competition, the largest global incentive competition award in history. The four-year competition aimed to combat climate change by challenging teams worldwide to develop high-quality carbon dioxide removal (CDR) solutions that are scalable to gigatonne levels and durably and sustainably remove CO₂ from the atmosphere and oceans. The grand prize of $50 million was awarded to Mati Carbon for their enhanced rock weathering solution, which applies finely crushed basalt over agricultural lands in India to accelerate a natural weathering process that permanently draws down atmospheric CO₂. This approach not only removes CO₂ but also delivers significant benefits to smallholder farmers, including improved soil health, reduced agricultural inputs, and increased income at zero cost to them. Runner-up teams included NetZero, Vaulted Deep, and UNDO Carbon, each recognized for their compelling carbon removal demonstrations. XFACTOR awards were given to Planetary and Project Hajar for their advancements in ocean and air carbon removal technologies, respectively. ([xprize.org](https://www.xprize.org/prizes/carbonremoval/articles/xprize-makes-history-awards-100m-prize-for-groundbreaking-carbon-removal-solutions?utm_source=openai))
4. <https://apnews.com/article/31d41e402fd5386bd564d7145e84e9db> - Mati Carbon, a U.S.-based company that supports Indian farmers, has been awarded the $50 million grand prize in the XPRIZE Carbon Removal competition, funded by the Musk Foundation. The competition, launched in 2021 with $100 million in total prizes, aims to accelerate carbon removal technologies essential to combating climate change. Mati Carbon employs a method called enhanced rock weathering, spreading powdered basalt rock on farmland to accelerate natural processes that capture carbon dioxide from the atmosphere and store it in oceans for millennia. This technique also enhances soil fertility and crop yields. The company’s scalable, cost-effective approach stood out among 1,300 teams from 88 countries. Several other innovative projects also received smaller awards, such as turning agricultural waste into biochar and storing organic waste underground. ([apnews.com](https://apnews.com/article/31d41e402fd5386bd564d7145e84e9db?utm_source=openai))
5. <https://www.forbes.com/sites/phildeluna/2025/04/23/carbon-removed-how-xprize-winners-aim-to-reshape-the-climate/> - The $100 million XPRIZE Carbon Removal competition, backed by the Musk Foundation, challenged teams worldwide to develop scalable solutions for removing carbon dioxide from the atmosphere. Over 1,300 teams from 80 countries participated, with 20 advancing to the final testing phase. The grand prize of $50 million was awarded to Mati Carbon, whose approach involves spreading finely crushed basalt across farmland to accelerate a natural weathering process that binds CO₂ into rock over time. This method not only removes CO₂ but also improves soil health and increases crop yields for smallholder farmers. Runner-up teams included NetZero, Vaulted Deep, and UNDO Carbon, each recognized for their innovative carbon removal demonstrations. XFACTOR awards were given to Planetary and Project Hajar for their advancements in ocean and air carbon removal technologies, respectively. ([forbes.com](https://www.forbes.com/sites/phildeluna/2025/04/23/carbon-removed-how-xprize-winners-aim-to-reshape-the-climate/?utm_source=openai))
6. <https://climateinsider.com/2025/04/24/xprize-awards-100-million-for-carbon-removal-solutions/> - XPRIZE, in partnership with the Musk Foundation, announced the winners of its $100 million Carbon Removal competition, the largest global incentive competition award in history. The four-year competition aimed to combat climate change by challenging teams worldwide to develop high-quality carbon dioxide removal (CDR) solutions that are scalable to gigatonne levels and durably and sustainably remove CO₂ from the atmosphere and oceans. The grand prize of $50 million was awarded to Mati Carbon for their enhanced rock weathering solution, which applies finely crushed basalt over agricultural lands in India to accelerate a natural weathering process that permanently draws down atmospheric CO₂. This approach not only removes CO₂ but also delivers significant benefits to smallholder farmers, including improved soil health, reduced agricultural inputs, and increased income at zero cost to them. Runner-up teams included NetZero, Vaulted Deep, and UNDO Carbon, each recognized for their compelling carbon removal demonstrations. XFACTOR awards were given to Planetary and Project Hajar for their advancements in ocean and air carbon removal technologies, respectively. ([climateinsider.com](https://climateinsider.com/2025/04/24/xprize-awards-100-million-for-carbon-removal-solutions/?utm_source=openai))
7. <https://houston.innovationmap.com/xprize-winners-mati-carbon-2671866679.html> - Houston-based Vaulted Deep took home the second-runner-up prize in the competition and $8 million for its organic waste storage process. The company provides permanent carbon storage by injecting nonhazardous organic waste deep underground. It spun off with $8 million in seed funding from Advantek Waste Management Services in 2023. Launched in 2021, the four-year XPRIZE Carbon Removal competition challenged global innovators to deploy scalable solutions for removing carbon dioxide from the atmosphere and oceans. More than 1,300 teams from 88 countries competed. XPRIZE finalists were required to remove at least 1,000 tonnes of CO₂ over a one-year demonstration period. ([houston.innovationmap.com](https://houston.innovationmap.com/xprize-winners-mati-carbon-2671866679.html?utm_source=openai))