Terraset

— A YEAR IN REVIEW

The first revolving fund to scale greenhouse gas removal and abatement

ISSUE 01
JUNE 2026

This report analyzes the first round of Terraset's revolving fund, which deployed ~$1.1M across 11 early-stage companies in four technology classes. It documents what was purchased, what it cost, and what it moved: project-level financial returns improved by 2.2 to 3.6 percentage points across technology classes, and portfolio companies collectively attracted over $114M in follow-on capital. The analysis also models where modest increases in volume or pricing would cross commercial thresholds, and what that means for the future.

— ABOUT TERRASET

Terraset raises and deploys philanthropic capital to scale greenhouse gas removal, abatement, and destruction. Since 2023, we've secured more than **$10M** in catalytic funding to directly support **26 projects** and removed, abated, or destroyed more than **23,000 tons** of greenhouse gas emissions. More than 85% of every dollar raised goes to programs.

We find the financing gaps that traditional philanthropy and commercial capital both miss, and we build tools to close them: pre-purchase commitments, grants, low-interest loans, first-loss capital to unlock third-party debt, and the revolving fund described in this report.

The revolving fund is, to our knowledge, the first time this financing structure has been applied to greenhouse gas removal at portfolio scale. We run it because philanthropic capital should work harder than a single deployment, and because the gap between where early-stage climate projects are and commercial capital starts flowing is a problem with a known solution. We're applying it.

This report covers the first revolving fund cohort, one piece of Terraset's broader work. The returns cited are those secured to date; more pre-purchases will be delivered in 2026 or 2027 for onward resale. Those already secured have demonstrated the model's viability and provided additional funding for Round Two.

— EXECUTIVE SUMMARY

The world needs to scale carbon removal (CDR) by at least 70% each year until 2050 to achieve global climate goals, but most early-stage projects can't attract the capital they need. Even some projects that have long-term, multi-million dollar offtakes can't secure the funding to get to short-term delivery.

Commercial project finance investors and lenders typically require 12–15% project-level financial returns before committing capital. Early-stage CDR projects tend to land around 6–7%. That gap is where many projects stall.

There is a clear way that philanthropy can play a role. Less than 0.1% of the $900 billion annual philanthropic market currently supports carbon removal, leaving an enormous opportunity that traditional grants alone can't close. Receivables financing is a well-established tool in other markets, and Terraset believes that the same mechanism could bridge the capital gap for early stage CDR companies. Terraset's revolving fund, seeded by the Schmidt Family Foundation, is designed to do just that.

Terraset purchases credits from early-stage companies, resells them to buyers, and recycles the proceeds into new purchases. Unlike a grant, the capital keeps working, and each cycle builds market credibility for portfolio companies while stretching the original philanthropic dollar further. To our knowledge, this is the first time a revolving fund structure has been applied to greenhouse gas removal at portfolio scale.

In the fund's first year, Terraset deployed ~$1.1M across 11 companies in 4 technology classes. Based on discounted cash flow modeling applied to actual purchase prices and publicly available market data, those purchases improved project-level financial returns by 2.2 to 3.6 percentage points; ERW gets within 0.4 points of commercial viability, and refrigerant destruction pushes past it entirely. For two of four technology classes, that was enough to reach or nearly reach the threshold where private capital starts flowing without philanthropic support.

Terraset tracks two types of financial impact. The first is direct capital that would not have moved without Terraset's involvement. Every dollar of philanthropic capital directly unlocked $6.50 to $7.10 in additional project investment. The second is follow-on capital, or broader fundraising activity by portfolio companies after Terraset's purchases. In less than 12 months following initial purchases, portfolio companies collectively attracted over $114M in third-party equity, grants, and offtakes.

REVOLVING FUND COHORT 1

$1.1M

catalytic capital deployed

$114M+

follow-on capital secured

11

high-impact climate solutions

1:7

every $1 unlocks $6.80+ in capital

6,117t

of greenhouse gases removed, abated or destroyed

— THE REVOLVING FUND MODEL

Terraset purchases carbon removal credits from early-stage companies, then resells those credits to end buyers, and recycles the proceeds into new purchases. This structure does four things for companies:

- **Prepays upfront:** reduces the startup capital a project needs to raise, which lowers risk when costs are highest;
- **Targets quality:** focuses on quality of delivery rather than securing the cheapest price on the market or paying below an average market price;
- **Commits to a volume:** provides revenue certainty that makes commercial co-investors, including project finance investors and lenders, more confident;
- **Extends runway:** gives projects a longer planning horizon during their ramp-up phase.

Together, they shift a project's financial returns from sub-commercial into fundable territory, at which point private capital starts flowing without philanthropic support.

TERRASET'S FIRST REVOLVING FUND COHORT

Terraset's first cohort was deliberately diverse across technology, maturity, and cost structure. In each case, the purchase structure of upfront prepayment for a committed volume was the same. Between Q2 2025 and Q1 2026, Terraset deployed ~$1.1M from the revolving fund across 11 companies in 4 technology areas:

Table 1: Round One portfolio: 11 companies, 4 classes

Class	Company	Technology	Tons Purchased
Biochar / Biomass Carbon Removal & Storage (BiCRS)	Restord	Biochar/ BiCRS	850
	Graphyte	BiCRS	650
	Carba	Biochar / BiCRS	350
	Charm	BiCRS (Bio-oil)	40
Enhanced rock weathering (ERW)	UNDO	ERW	148
	Eion	ERW	500
Refrigerant destruction	Tradewater	Refrigerant Dest.	1,000
	Recoolit	Refrigerant Dest.	417
Novel CDR & methane abatement	CarbonRun	River Alkalinity	462
	Andes	Carbon Mineralization	500
	StratX	ERW + Methane Abatement	1,200
Third-party MRV	Isometric	Various	N/A
			6,117

In most cases, Terraset paid above the average price for credits in a particular methodology, and that decision to target premium quality is deliberate. When an early-stage company can point to a credible buyer willing to pay for quality, it accelerates when commercial project financiers and lenders assess a project.

Case Study A

Restord: $1.3M loan, directly catalyzed

Terraset's pre-purchase gave Restord the revenue certainty it needed to secure a $1.3M loan from a commercial lender, roughly 6.9x the value of Terraset's purchase. Without the offtake commitment, the loan would not have closed. This is the clearest example of direct catalytic capital in round one.

Case Study B

UNDO: from pre-purchase to Microsoft

Terraset's early purchase of UNDO credits was followed within 12 months by a $5M debt facility from Inlandsis, a $2.3M offtake with Barclays, and a $10.1M offtake with Microsoft. Terraset doesn't claim credit for these deals, but early credible buyers signal quality, and quality signals draw commercial capital. UNDO's trajectory illustrates the pattern.

Table 2: Terraset paid above average market price in three of four technology classes

Technology class	Terraset Avg Price	Market Average	Premium
Biochar / BiCRS	$207/t	~$155/t	+$52/t
ERW	$410/t	~$300/t	+$110/t
Refrigerant Destruction	$32/t	~$28/t	+$4/t
Novel CDR	$294/t	~$300/t	At market

Terraset average prices are spend-weighted across all portfolio companies in each technology class, using Table 1 purchase data. StratX is excluded from the ERW average due to its blended pricing structure. Market benchmarks: CDR.fyi (2025), Sylvera Carbon Offset Pricing Report (Oct 2025), AlliedOffsets ERW Market Report (2025), and company disclosures. Benchmarks reflect approximate mid-market rates; actual transaction prices vary by buyer, volume, and verification standard.

— WHAT IT ACCOMPLISHED

Financial impact

Discounted cash flow analysis applied to each technology class (see Appendix A for full methodology) shows that Terraset's combination of upfront prepayment, price commitment, and committed volume improved project-level financial returns by 2.2 to 3.6 percentage points (pp) across classes, closing most or all of the remaining gap to commercial viability for two of four technology classes.

Table 3: Terraset's purchases nearly or fully close the gap to commercial viability for two technology classes.

Technology	Baseline IRR	With Terraset	Improvement	Commercial Threshold	Status
Biochar / BiCRS	5.30%	7.50%	2.20%	12%	Signal established
ERW	9.70%	12.60%	2.90%	13%	**Close - 0.4pp away**
Refrigerant Destruction	14.00%	17.60%	3.60%	12%	**Already commercial**
Novel CDR	-5.10%	-2.90%	2.20%	13%	Pre-commercial

IRR modeled using standard DCF analysis applied to each technology class. Baseline IRR reflects typical project economics using publicly available CAPEX, OPEX, and revenue benchmarks for each technology type. "With Terraset" IRR adds the effect of upfront prepayment and committed volume at actual Year One purchase levels. Full methodology in Appendix A. Commercial threshold reflects typical infrastructure investors' and project finance lenders' hurdle rates; 12% applied to mature technologies, 13% applied to earlier-stage classes. These are class-level estimates.

Biochar needs a signal. Terraset's purchases represent only about 5–10% of modeled project capacity by volume. Scaling to 20–35% volume share at similar prices would bring this class to commercial viability. The revolving fund is functioning as intended: planting flags, not writing the whole check.

ERW is almost there. At 12.6% against a 13% commercial threshold, ERW is close to the point where private capital starts flowing without philanthropic support. A relatively modest increase in committed volume (or a co-philanthropist) would push it over.

Novel CDR is pre-commercial. CarbonRun issued the world's first River Alkalinity Enhancement credits in 2025. Andes released the first microbial carbon mineralization methodology in 2024. These are frontier technologies where measurement and verification still dominate project economics. Terraset's prepayment kept these projects moving.

Refrigerant destruction is the standout. A proven, lower-cost technology where Terraset's contribution is demand certainty and market credibility. Terraset's involvement accelerates pipeline expansion at a time when this methodology is starting to attract wider attention.

Capital Unlocked

For every dollar Terraset deployed, the project raised $6.50 to $7.10 in additional capital. Portfolio companies collectively attracted over $114M in third-party equity, grants, and offtake agreements in the 12 months following Terraset's initial purchases, including:

Restord	>$1.3M loan directly catalyzed by Terraset; ~6.9x return on Terraset's purchase
Carba	$6M equity secured
Charm	$87M in additional offtake agreements
Andes	$1.2M from new offtake agreement
UNDO	$5M Inlandsis debt facility; $2.3M offtake agreement with Barclays, $10.1M offtake agreement with Microsoft
Graphyte	$1M offtake agreement with JP Morgan, $250k pre-purchase from Frontier
Eion	Acquired; cited Terraset pre-purchase as key to reaching that agreement

Follow-on capital sourced from company press releases, public announcements, and direct company disclosures. Figures reflect third-party equity, grants, debt facilities, and offtake agreements closed in the 12 months following Terraset's purchase.

Terraset tracks this unlocked capital in two ways: direct capital unlocked, meaning funding where Terraset's purchase explicitly unlocked a larger deal (e.g. Restord, where Terraset's pre-purchase directly catalyzed a seven-figure bank loan) and follow-on, indirect capital, meaning third-party funding raised in the 12 months following a purchase. Terraset is conservative about publicly claiming credit for this follow-on impact. The carbon removal market is moving fast, and some of these companies would have attracted some amount of capital regardless, but Terraset provides a credible early signal that derisks further investment or purchase.

Table 4: Philanthropy deployed and capital unlocked

Technology	Terraset deployed	Capital unlocked	Mobilization ratio
Biochar / BiCRS	$504,800	$4.72M	9.4:1
ERW	$305,400	$3.80M	12.4:1
Refrigerant Destruction	$46,020	$660K	14.3:1
Novel CDR	$322,500	$2.83M	8.8:1

Prepayment reduces the financing risk that otherwise keeps commercial capital on the sidelines. Philanthropic capital creates the conditions for private capital to show up.

— YEAR TWO: MORE VOLUME, LESS COMPLEXITY

Year one validated our core thesis that philanthropic capital can move the economics of early-stage carbon removal in ways that other types of capital alone cannot.

The first round of the revolving fund is, to our knowledge, the first time this financing structure has been applied to greenhouse gas removal at portfolio scale, and the results are sharper than we expected: a 2.2 to 3.6 percentage point IRR improvement across four technology classes, over $114M in follow-on capital, and clear evidence that ERW is within reach of commercial viability.

A few things stood out. For Biochar and ERW, commitment to a particular price point was cited as the most impactful component of the deal. For refrigerant destruction and novel CDR, upfront payment and demand certainty mattered more. The clearest next lever is volume.

Terraset's per-project share sits at 5–19% of modeled capacity, and the ERW sensitivity tables in Appendix A show that even modest increases in committed volume cross the commercial threshold.

We're using recycled capital from round one, plus new philanthropic commitments, to deepen our position in technology classes that are close to commercial viability and to plant new flags in pre-commercial categories.

Round two is open to new partners.

1. Projects ready to accept pre-purchase commitments in BiCRS, ERW, refrigerant destruction, and frontier removal pathways.
2. Buyers willing to take on quality credits from our pipeline as they come due, which is what keeps the fund revolving.
3. Funders who want to participate in a model that stretches every philanthropic dollar across multiple deployment cycles rather than spending it once.

The ask is more volume, not more complexity. The mechanics work. What we need now are partners to scale them.

— APPENDIX A: METHODOLOGY OF PROJECT ECONOMICS

Terraset's purchases affect project economics in three ways.

First, **upfront prepayment reduces the effective startup capital** a project needs to raise, lowering financial risk in the years when costs are highest and revenue is lowest.

Second, a willingness to pay for quality and potential scale means **the company earns more per ton than the market rate**. Terraset paid $52/ton above average market price for Biochar/BiCRS and $110/ton above average market price for ERW, and for early-stage companies that premium also functions as a public signal to other buyers.

Third, **volume commitment provides revenue certainty.** Knowing a buyer is committed to purchasing a set volume reduces forecasting risk and makes co-investors more confident.

The IRR improvements reflect Terraset's actual volume commitments, 5–19% of modeled project capacity depending on the technology class. The revolving fund is designed to plant flags across many projects rather than dominate any single one. But the most actionable question for a co-investor is: what does more volume do? The tables show how IRR changes for Biochar/BiCRS and ERW as Terraset increases its volume share. Bold cells cross the commercial threshold.

Table 5: Biochar/BiCRS - reaching the 12% hurdle requires higher volume and price

For Biochar, neither lever alone gets the class to its 12% hurdle in the near term. It requires both significantly higher volume and higher pricing working together.

What happens if Terraset increases its volume commitment, holding price constant at $207/t?

Scenario	Volume Share	Current (~$207/t)	+$15/t premium	+$30/t premium
Current	5% (current)	7.50%	7.60%	7.80%
Modest increase	10%	7.80%	8.00%	8.20%
Meaningful increase	20%	8.40%	8.70%	9.10%
Full scaling	35%	9.80%	10.30%	**12.10%**

What happens if Terraset increases its price premium, holding volume constant at 5%?

Scenario	Price Paid	IRR
Current	$207/t	7.50%
Modest increase	$227/t	7.60%
Meaningful increase	$242/t	7.80%

About Terraset

Terraset is a US-based nonprofit that deploys philanthropic capital to scale greenhouse gas removal, abatement, and destruction. We find what's working, fund what's missing, and get out of the way.

Since 2023, we've deployed over $10M across 25+ projects, with 85%+ of every dollar going directly to programs.

Our financing tools include pre-purchase commitments, the revolving fund described in this report, grants, and low-interest loans.

With support from the Schmidt Family Foundation, the Grantham Foundation, Tim Ferriss, Kevin Gibbs & Page Rockwell, and the Paul Graham Foundation.

Table 6: ERW - a volume increase to 15% crosses the commercial threshold on its own

ERW is the most immediate opportunity. A volume increase to 15% of project capacity crosses the commercial threshold on its own. At that point, private capital should start flowing.

What happens if Terraset increases its volume commitment, holding price constant at $410/t?

Scenario	Volume Share	Current (~$410/t)	+$15/t premium	+$30/t premium
Current	6.5% (current)	12.60%	12.70%	12.90%
Modest increase	10%	12.80%	**13.00%**	13.20%
Meaningful increase	15%	13.10%	13.40%	13.70%
Full scaling	20%	13.50%	13.90%	14.30%

What happens if Terraset increases its price premium, holding volume constant at 6.5%?

Scenario	Price Paid	IRR
Current	$410/t	12.60%
Modest increase	$430/t	12.70%
Meaningful increase	$450/t	12.90%

Understanding the value of philanthropy

Because Terraset pays before credit delivery, suppliers receive capital earlier than they would under standard payment-on-delivery terms. In this report, we cannot yet quantify the timing benefit. This would produce figures higher than Terraset's nominal spend, as the value of capital to a pre-commercial project exceeds face value.

IRR estimates are based on published technology class benchmarks and standard project finance assumptions. Mobilization ratios are illustrative and reflect order-of-magnitude leverage effects rather than outputs from a project-specific financial model.

— APPENDIX B: GLOSSARY

Bankable	A project is "bankable" when its financial returns meet or exceed commercial investor thresholds, enabling it to attract private capital without ongoing philanthropic support.
DCF (Discounted Cash Flow)	A financial modeling method that calculates the present value of future cash flows. Standard tool for evaluating investment viability.
Hurdle rate	The minimum return a commercial investor requires before committing capital. Typically 12–15% for infrastructure projects.
IRR (Internal Rate of Return)	The annualized return a project generates over its lifetime. The standard metric for evaluating project economics.
Mobilization ratio	How much total private investment is unlocked per dollar of philanthropic capital deployed. A 7:1 ratio means each philanthropic dollar enables $7 of private investment.
MRV (Monitoring, Reporting, and Verification)	The systems used to measure and confirm that carbon removal actually happened. MRV costs are a major barrier for frontier technologies.
Offtake agreement	A contract where a buyer commits to purchase a set quantity of output at a specified price over a defined period. Critical for project financing.
Pre-purchase agreement	A commitment to buy carbon credits before they are produced. Reduces a company's startup capital requirements, provides cash flow, and signals demand.
Premium pricing	Paying above the prevailing average market rate for carbon credits in a particular methodology. Improves project revenue and signals quality to commercial buyers.
Valley of death	The period between when a technology is proven and when it can attract commercial investment. Projects in this phase have positive but sub-commercial returns and rely on grants or philanthropic capital to survive.
Volume commitment	The quantity of a project's future output that has been committed to purchase. Larger commitments have a greater effect on project economics than pricing alone.

All figures are based on publicly available market data, Terraset's revolving fund purchase data, and standard DCF investment modeling. Outputs should be stress-tested with project-level data for transaction diligence.

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