

April 2025

# 2024 Impact Report

Enabling a Sustainable Planet for Society



**TERRA ALPHA**  
INVESTMENTS

## Authors



**Julianna Brunini, CFA**  
Senior Investment Analyst &  
Director of Research



**Amy Dine**  
Director of Corporate Engagement



**Tim Dunn, CFA**  
Co-Founder &  
Chief Investment Officer



**Marissa Oliveri**  
Investment Analyst



**Roshni Puli**  
Research Analyst



**Dan Sanborn, CFA**  
Senior Portfolio Manager



**Nathaniel Schwartz, CFA**  
Senior Investment Analyst

## About Terra Alpha

Terra Alpha Investments is grounded on the belief that our economic system can, and must, transition to one that is truly sustainable – one that provides for the needs of society while operating within our planet’s regenerative natural resource limits. Our positive vision of a sustainable economy underlies every aspect of our work: how we invest, engage with companies, and advocate for broader change via our thought leadership work.

Our firm was founded in 2014 by highly experienced investment professionals to provide asset owners with a differentiated way to invest in our rapidly changing world. We utilize our proprietary Environmental Productivity and Enduring Business Model analytical frameworks to identify investment opportunities and to allocate investor capital into publicly traded companies that are profitably leading the transition to a truly sustainable economy. We are a signatory of the Net Zero Asset Managers initiative and 100% dedicated to sustainable investment strategies.

<http://www.terraalphainvestments.com>

Washington, DC | Los Angeles, CA

## Contributors



**Emily Hiltz**  
Manager of Business Development

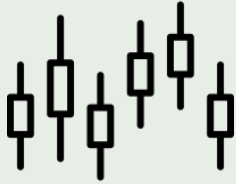


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# I. By The Numbers – Terra Alpha’s Impact

**84%** science-based targets (SBT) portfolio coverage as of 1Q 2025



**1st** and only US-based asset manager with a validated science-based target



SCIENCE  
BASED  
TARGETS

**38,000+**

total views on Terra Alpha publications sent throughout the year



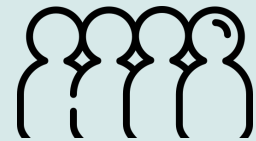
**100%** AUM we have committed to manage in line with net zero emissions by 2050



**20+** social and governance metrics being tracked



**69%** of portfolio companies have boards with more than one-third female members



Terra Alpha Team:

**50%** Identify as women

**28%** Ethnically diverse



**94%** less carbon intensive portfolios versus the benchmark



**1,074**

proxy proposals voted by Terra Alpha Investments



**119** Active engagements with our portfolio companies



**8,700** cubic meters of water usage avoided compared to the same \$1M invested in the benchmark



**48%** less waste generated compared to the same \$1M invested in the benchmark



## II. Introduction

As we celebrate our firm's first 10 years, I am pleased to share with you our 2024 Impact report. The report looks back at our impact successes over the past year and looks ahead to the impact work we expect to undertake in the months ahead.

As a reminder, Terra Alpha's overall purpose is to **enable a sustainable planet for all society in a science-driven, caring, rigorous, and transparent manner**. We do that primarily through our investment process, which seeks to provide our investors with **competitive financial returns, superior environmental returns, and real-world impact** through our thought leadership and direct engagement with companies.

This report focuses on how our funds provide our investors with superior environmental returns and our firm's approach to having real-world impact. In both cases, supporting our commitment to enabling a sustainable planet. Specifically, we aim to help catalyze the reduction of greenhouse gas (GHG) emissions, the use of and impact on freshwater systems, and the reduction of raw material usage and waste streams, by advocating for improved corporate environmental efficiency business practices and their disclosure.

The key question is: **Are we making progress?** Our answer is yes and no.

- + **No:** Over the past 10 years while the rate of change for the increase in GHG emissions, water use, and waste streams have slowed relative to global economic activity (intensity scores) they are not yet declining at a global level. And the risks associated with climate change and freshwater availability have grown.
- + **Yes:** Corporate recognition of their environmental impacts has improved. Corporate environmental reporting has greatly improved. Corporate commitments to and target setting for GHG emission, water impact, and waste streams have grown exponentially. And, many of the leading companies have actually reduced their negative impacts.
- + **Conclusion:** More work is needed.

In this report we relay many of the specific outcomes from our work including portfolio level investor outcomes and actual environmental and governance improvements within portfolio holdings.

Of course, we must acknowledge the implications of the abrupt change in the political and economic circumstances over the last few months. As we have noted in previous communications, the new US leadership is aggressively seeking to roll back environmental regulations and claw back some key parts of the Biden administration's environmental funding efforts. Perhaps even more concerning are the very public efforts by President Trump to discourage or discredit efforts to address broadly recognized environmental threats and societal imbalances.

In response to the changing political climate, we believe the role of the private sector is more critical than ever. This includes companies and capital markets participants, like Terra Alpha. We remain committed to our work that allows our investors to allocate capital in a manner that serves their goals. And we will continue to exercise our freedom to invest in and advocate with companies on initiatives that we believe will make them even more successful in our challenging and rapidly changing world.

We thank our investors, portfolio companies, partner organizations, and community for your active support.



Tim Dunn  
Co-Founder and CIO

### III. Report Overview

Through our fifth Impact Report, we aim to provide our investors and stakeholders with a comprehensive overview of our efforts and achievements over the past year.

Terra Alpha was founded to enable a sustainable planet for society, and we are fully committed to leading the shift to a sustainable economy, which we pursue through our three core pillars:

Our Portfolio	Corporate Engagement	Thought Leadership
<ul style="list-style-type: none"> <li>+ We are invested in companies that are profitably leading the transition toward a truly sustainable economy (forward thinkers, enablers, and pioneers)</li> <li>+ Our portfolio has significantly lower carbon emissions, water usage, and waste streams per \$ of revenues versus market indices and the overall economy</li> <li>+ We are committed to moving our portfolio's coverage of companies with science-based targets for carbon to 95% by 2030 (84% as of 3/31/2025)</li> </ul>	<ul style="list-style-type: none"> <li>+ We broadly advocate for corporations to adopt environmentally smart business practices and disclosure</li> <li>+ We have analyst-driven customized engagement with portfolio holdings based on identified highest opportunities and risks</li> <li>+ Our active ownership ranges from proxy voting aligned with policies to filing shareholder resolutions if necessary</li> </ul>	<ul style="list-style-type: none"> <li>+ We contribute to peer learning organizations and collaborate with like-minded investors</li> <li>+ We are active participants in webinars, conferences, lectures, and academia</li> <li>+ We compose EP Insights, Terra Alpha white papers, and Terra Alpha Voices</li> <li>+ We engage in public advocacy, including direct communication with federal agencies</li> </ul>

Our first step is through our investment process and portfolio construction. Secondly, through engagement directly with portfolio companies including proxy voting, thematic campaigns across companies, and company-specific interaction. Thirdly, we express our voice in thought leadership and advocating with collaborative efforts on the policy front.

A few of the most notable actions and impacts from 2024 and early 2025 are that we:

**Portfolio:**

- + Financed 79% fewer carbon emissions, 90% less water usage, and 48% less waste generation (compared to the global index) via our investment portfolio,
- + Surpassed our original 2025 portfolio science-based target (SBT) coverage goal of 75%. Current coverage stands at 84% as of 1Q25, from 43% baseline in 2020.

**Corporate Engagement and Advocacy:**

- + We continued a portfolio-wide campaign on Net Zero commitments and action plans,
- + Had a total of 119 active engagements with portfolio companies,
- + Launched a water campaign across the portfolio focused on addressing key water risks and engaging with companies to improve disclosures and perform water risk assessments,
- + Continued our engagement campaign regarding data centers' resource use and impact, and
- + Developed an engagement strategy focused on plastic usage, waste reduction, circularity, and setting plastic-related targets, with plans for future engagement in 2025.

**Thought Leadership:**

- + We added more depth to our Advisory Board with [Justin “Chester” White joining us](#),
- + Collaboratively engaged in policy advocacy alongside peer organizations and companies,
- + Led a weeklong Wall Street Development Accelerator bootcamp, and
- + Expanded our reach through podcasts, webinars, a university course, and participation on conference panels, with over 38,000 views on Terra Alpha publications throughout the year.

We are eager to see where we can move these areas of impact work in 2025. The regulatory and political environment may represent headwinds to the themes we see as important for business long-term success, yet we hold confidence in our portfolio holdings, our investment strategy and selection process, and our engagement efforts broadly, to continue to demonstrate that sustainable business practices lay a path to greater success for corporations and investors.

We hope the following pages provide a good sense of how we go about our impact work at Terra Alpha, and specifically over the past twelve months.

## IV. Firm Initiative Updates



### I. Updates to our Environmental Productivity (EP) Framework

#### *Raising the Bar on Environmental Due Diligence*

Terra Alpha's Environmental Productivity (EP) framework is a core component of our investment process. The framework evaluates a company's use of and impacts on natural resource systems, thereby helping analysts identify financially material issues relevant to the company's business model, growth opportunities, costs, operations, reputation, and so on. Analysts' EP Ratings inform both our investment decisions and our company-specific engagement priorities.

A significant initiative in 2024 was the thorough reexamination and updating of our EP framework to make use of improved corporate disclosures. Some key improvements include:

- + Ensuring that our assessments of water risks and impacts include supply chain and product chain considerations, in addition to operational considerations,
- + Ensuring that all companies are thoroughly assessed on ecosystem health topics (such as land use, forests, oceans, and biodiversity),
- + Allowing analysts more flexibility to adjust topic weights across climate change, water, waste, and ecosystems, based on their company-specific materiality assessment. (Previously, weights were based on GICS sector categorization), and
- + Standardizing internal data collection to facilitate progress-tracking, company-specific engagements, and our portfolio impact reporting.

The research team is now working to roll out the updated EP framework for current and potential future investments.



### II. Low Carbon Economy: Priorities and Progress

Decarbonization has been a central focus for Terra Alpha since our founding, both in terms of our investment approach and our ambitions for societal impact. In 2024, our climate-related priorities remained constant. We continue to advocate that companies:

1. Disclose their greenhouse gas (GHG) emissions,
2. Set science-based GHG reduction targets,
3. Disclose action plans to achieve their targets, and
4. Transparently disclose progress toward their targets.



While we are proud of our portfolio companies' progress in 2024, it is difficult to call the year a success from a societal perspective. Global fossil fuel emissions reached a new high in 2024 (see: [Global Carbon Budget](#)) and average temperature rise exceeded 1.5C for the first time (see: [Copernicus Climate Change Service](#)). **Against this backdrop, we continue to believe that climate change-related stewardship is as urgent as ever, and that climate change is ever-more material to investors with a long-term horizon.**

### Progress in 2024

The table below summarizes our portfolio companies' progress on each decarbonization-related engagement priority versus last year:

Priority & Status	Progress versus last year <sup>1</sup>
Greenhouse gas emissions disclosure	Scopes 1&2 <ul style="list-style-type: none"> <li>+ <b>100%</b> of portfolio companies continued to disclose Scope 1 and Scope 2 (location- and/or market-based) emissions for data year 2023, with <b>89%</b> receiving third-party assurance on their disclosure</li> <li>+ These results are constant versus the same share of companies for data year 2022</li> </ul> Scope 3 <ul style="list-style-type: none"> <li>+ <b>84%</b> disclosed a reasonably complete Scope 3 inventory for data year 2023, compared to <b>80%</b> for data year 2022</li> <li>+ <b>52%</b> sought third-party assurance on their Scope 3 emissions, compared to <b>35%</b> for the previous year</li> </ul>
Science-based emissions reduction targets <sup>2</sup>	Share of assets under management (AUM) (excluding cash) covered by validated science-based targets: <ul style="list-style-type: none"> <li>+ <b>76.4%</b> at year-end 2024, versus <b>76.6%</b> at year-end 2023</li> <li>+ Note that by the end of March 2025, this metric had risen further to <b>83.8%</b></li> </ul>
Developing and disclosing robust plans to achieve their targets (including resource allocation)	According to Terra Alpha analysts' assessments: <ul style="list-style-type: none"> <li>+ <b>6%</b> of companies have disclosed what we believe to be a robust plan, versus <b>5%</b> last year (one additional company)</li> <li>+ <b>56%</b> had disclosed a high-level roadmap for achieving their climate targets, versus <b>55%</b> last year</li> </ul>

<sup>1</sup> Reflects portfolio constituents as of year-end 2024 and emissions data for the year 2023 (most recent available)

<sup>2</sup> By "science-based" targets, we mean those that are ambitious enough to result in near-term absolute emissions reductions, inclusive of Scope 3 emissions as appropriate, without over-reliance on offsets/removals, and with validation by the [Science Based Targets initiative](#)

Priority & Status	Progress versus last year <sup>3</sup>
Demonstrating absolute emissions reductions over time	<p>Using the emissions database we have compiled for our portfolio companies<sup>4</sup> and defaulting to <b>location-based Scope 2 data</b> when available, we see that:</p> <ul style="list-style-type: none"> <li>+ 53% of portfolio companies reported a decline in absolute Scope 1&amp;2 emissions for data year 2023 versus data year 2022,               <ul style="list-style-type: none"> <li>+ If we apply a “significance threshold” to only give credit for a reduction of 5% or greater, the share is 26% of companies</li> </ul> </li> <li>+ 42% reported a decline in absolute Scope 1&amp;2 emissions for data year 2023 versus data year 2021</li> <li>+ If we apply a “significance threshold” to only give credit for a reduction of 5% or greater, the share is 40% of companies</li> </ul> <p>Using the emissions database we have compiled for our portfolio companies<sup>4</sup> and defaulting to <b>market-based Scope 2 data</b> when available, we see that:</p> <ul style="list-style-type: none"> <li>+ 60% of portfolio companies reported a decline in absolute Scope 1&amp;2 emissions for data year 2023 versus data year 2022,               <ul style="list-style-type: none"> <li>+ If we apply a “significance threshold” to only give credit for a reduction of 5% or greater, the share is 44% of companies</li> </ul> </li> <li>+ 61% reported a decline in absolute Scope 1&amp;2 emissions for data year 2023 versus data year 2021               <ul style="list-style-type: none"> <li>+ If we apply a “significance threshold” to only give credit for a reduction of 5% or greater, the share is 56% of companies</li> </ul> </li> </ul> <p>Generally, market-based Scope 2 accounting methods give credit for corporate renewable power procurement efforts, while location-based Scope 2 accounting methods assume the company relies on local power grids.</p>

*Note that we continue to urge caution before drawing conclusions from Scope 3 data at the portfolio level, as both the availability and quality of this information lag meaningfully behind that of Scopes 1 and 2.*

**Table 1.** Source: Terra Alpha Investments

The share of companies in our portfolio that have science-based emissions reduction targets (SBTs) remains a key performance indicator that we track closely. Why? Because we believe a net zero investment portfolio requires all of its constituent companies to be working toward ambitious emissions reductions.

In 2024, we maintained roughly flat SBT coverage (76.4% as of 12/31/2024, versus 76.6% as of 12/31/2023). While we did not achieve our intention to reach 80% by year-end 2024, the roughly flat result masks a variety of positive updates behind the scenes, including:

- + One new SBT validation by a portfolio company,
- + Two portfolio companies increasing their SBT ambition from “Well-Below 2C” temperature alignment to “1.5C” temperature alignment,

<sup>3</sup> Reflects portfolio constituents as of year-end 2024 and emissions data for the year 2023 (most recent available)

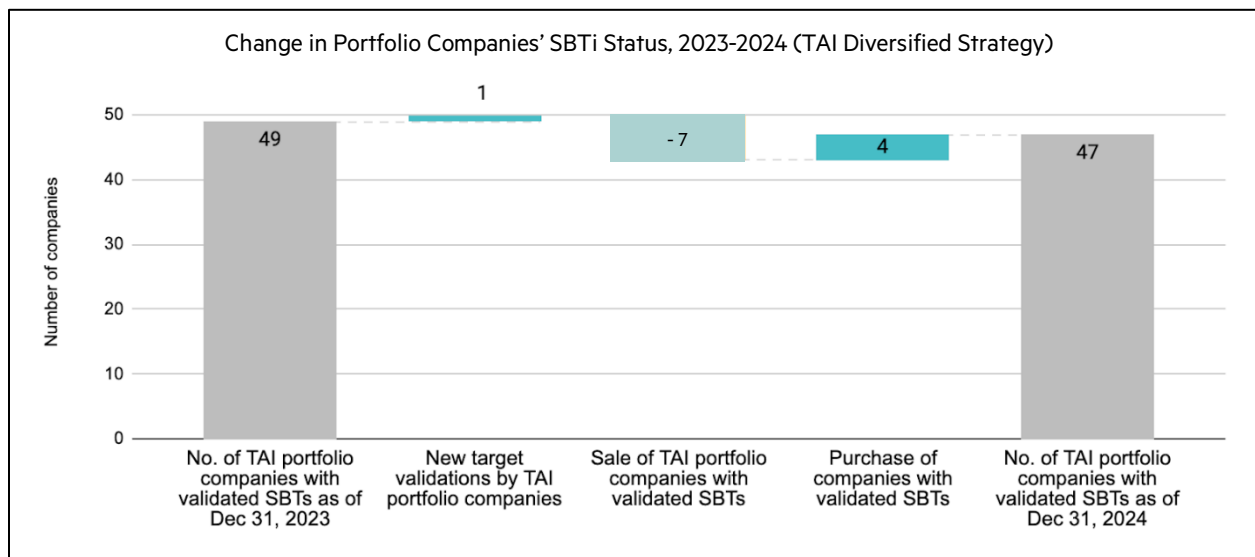
<sup>4</sup> Please see **Appendix 1** for a summary of our data compilation process (such as backfilling data when companies restate historical years) and instances where human judgment was required

- + Three portfolio companies making new commitments to setting SBTs,
- + Investment research leading to the addition of four more companies with validated SBTs to the portfolio, and
- + Investment research leading to the addition of two companies committed to setting SBTs to the portfolio.

However, the above momentum was essentially offset by:

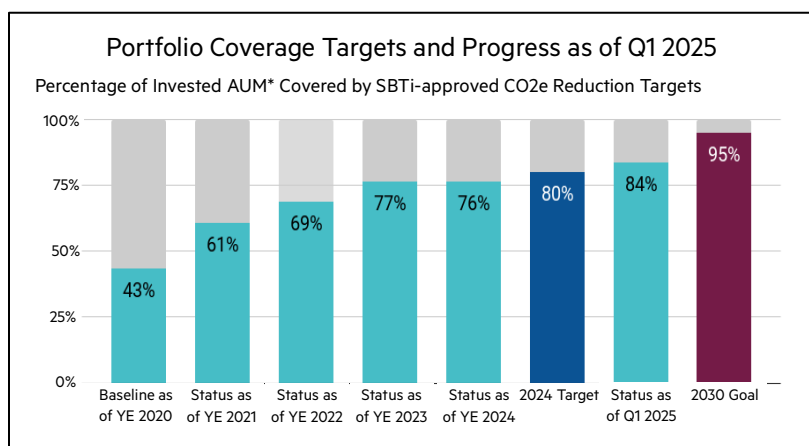
- + Exiting our positions in seven companies with validated SBTs due to Enduring Business Model (EBM) concerns, and
- + Exiting our positions in two companies committed to setting SBTs, again due to EBM concerns.

**Notably, our portfolio coverage metric did exceed our 80% target in Q1 of 2025, with three more portfolio companies achieving SBT validation.** As of March 31, 2025, coverage stands at 84%.



**Figure 1.** Portfolio coverage evolution in 2024

As our overall coverage increases, we expect increasingly difficult work ahead – in other words, we anticipate the remaining companies without science-based targets will be tougher to convince than the early adopters. Our team remains motivated by the challenge and focused on constructive direct corporate engagement.



**Figure 2.** Terra Alpha's science-based portfolio coverage targets and progress.  
 \*Invested AUM excludes cash position we hold for liquidity needs.

### Financed Emissions

Terra Alpha continues to report our financed emissions in line with the emerging best practice standard developed by the [Partnership for Carbon Accounting Financials](#) (PCAF). Please see **Appendix 1** for the updated data tables and methodology notes.



### III. Diversity, Equity, and Inclusion

As a firm, we strongly believe that diversity of experiences and opinions can lead to better decision-making. Therefore, it is important that we look internally and externally at factors that can encourage such a work environment. We continue to collect perspectives that might help us maintain an enviable work culture, as well as help us assess the companies we invest in.

In 2024, our Diversity, Equity & Inclusion work remained centered on our four pillars: Talent Acquisition, Belonging at Terra Alpha, Advocacy & Education, and Investment Analysis.

#### *An update on the Four Pillars*



#### ***Talent Acquisition***

Diversity, equity, and inclusion considerations and best practices are formally built into our hiring process and internship program. Focusing on diversity, equity, and inclusion in every step of the process, from the job description to the interview questions, has yielded great results. Applicant pools for open positions are increasingly competitive and diverse and have led to outstanding hires that have strengthened our team and increased our diversity in a number of important ways.

Our internship program continues to be an excellent way for us to build a pipeline of talent to be considered for future openings, as well as a way for our small firm to have an outsized impact in addressing the lack of diversity in the investment industry. The goals of our internship program are to augment our research capacity, educate the next generation of investors, provide meaningful opportunities for underrepresented groups in finance, and build a pipeline of talent for future hiring.

In 2024, we hired two summer interns who provided valuable research and insights while gaining hands-on industry experience. Read their [intern profiles](#) to learn more about their contributions and growth.



### ***Belonging at Terra Alpha***

Belonging at Terra Alpha is a continuous pursuit of building a culture of inclusiveness and respect that celebrates diverse thinking. We have conducted annual self-reported demographic surveys and annual belonging surveys (which continue to result in very high scores), reviewed our teamwide [DiSC assessment](#) and individual Gallup CliftonStrengths assessments, and we annually pledge to uphold a Social Commitment to one another. Fostering a sense of belonging is always a top priority at our annual offsite retreat and an underlying objective at each of our team events.



### ***Advocacy and Education***

Through our investments, our internal programs, and our external outreach, we strive to advocate for diversity, equity, and inclusion and educate others on its importance. In our proxy guidelines and voting, we have taken a clear stance on supporting diversity, equity, and inclusion in our corporate action. We continued our disclosure to the CFA Institute as signatories of the CFA's Diversity, Equity, and Inclusion Code. Additionally, in 2025 a number of corporate diversity, equity, and inclusion experts have shared their professional experiences and insights with us.

Terra Alpha's internship program continues to hire bright and ambitious students and deliberately provides students with diverse backgrounds with valuable hands-on experience in the investment industry. Each of Terra Alpha's interns is guided through extensive market research and individual company research projects that culminate in a stock pitch to our entire investment team.

In Terra Alpha's third year of partnering with the [Wall Street Development Accelerator](#) (WSDA), we led one of the WSDA's bootcamp groups which entailed a week-long curriculum covering the basics of equity research and financial statement analysis. This partnership allows us to reach a larger audience and increase our leverage in our quest to promote diversity, equity, and inclusion across the investment industry and beyond.



### ***Investment Analysis***

Diversity, equity, and inclusion analysis is an important piece of the puzzle in our Enduring Business Model framework. We evaluate the traits of the workforce along with the policies and practices of each company we invest in. As part of our investment process, analysts and portfolio managers incorporate this information into their assessment of the governance, management, and human capital of each company in recognition of the reality that diversity, equity, and inclusion are often indicators of strength, and can give a sense of a company's ability to execute on its business model.

Diversity, equity, and inclusion data on our portfolio can be found on pages 17 and 18 in the "V. Portfolio Impact" section.

## V. Portfolio Impact

Our portfolio remains the area where we can have the greatest impact for our investors, the environment, and society through both our investment decisions and our active ownership approach. As of year-end 2024, our strategies were invested in companies with a combined market capitalization of \$18.7 trillion and revenue of \$3.0 trillion. The companies in which we invest have an impact not only through the products and services that they provide, but also through how they utilize natural resources throughout their value chains. When we are determining whether to invest in a company, we assess its enabling, pioneering, and forward-thinking qualities:

- + **Enabling qualities** reflect how the firm considers our changing world in the products and services they offer. These companies often allow or help other industries or customers to be more efficient at utilizing natural resources through their goods or services (e.g., Xylem, an American water technology and equipment provider, is a leader in developing innovative water solutions with the use of smart technology). We believe that around **82%** of our holdings exhibit these enabling characteristics.
- + **Pioneering qualities** reflect disruptive tendencies toward traditional industries in an effort to adapt to our changing world (e.g., SalMar, a Norwegian fish farm company, is demonstrating how offshore salmon farming can be used to produce a more environmentally friendly protein to feed our growing population). We believe that around **26%** of our holdings showcase these types of pioneering characteristics.
- + **Forward-thinking qualities** reflect how a company considers the risks and opportunities related to our changing planet in how they operate (e.g., Unilever, a British consumer goods company, is trying to minimize its operational footprint). We believe that around **92%** of our holdings exude forward-thinking tendencies.

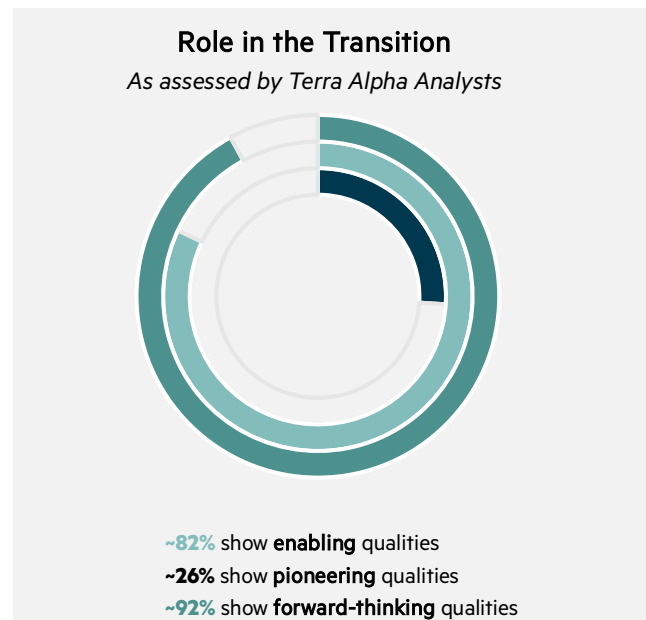


Figure 3. Source Terra Alpha Investments

Given our science-driven and intentional approach to investment decision making, our funds naturally gravitate toward companies with significantly lower carbon, water, and waste footprints than those of their industry peers and the overall global economy, translating to better environmental outcomes. Our active ownership approach then allows us to continue to build our understanding of a company's dependencies and impacts, while giving us an opportunity to provide input on the firm's plans, initiatives, and outcomes.

### Portfolio Intensity Metrics

We provide transparent reporting to our investors by sharing holding-level information, which includes each company's Environmental Productivity Rating, Enduring Business Model Score, and carbon, water, and waste intensity measures (when available).

Figures 4 & 5 below show snapshots of the relative intensity measures for both our diversified and concentrated strategies as of year-end 2024. These charts are an example of the type of information we regularly provide to our investors.

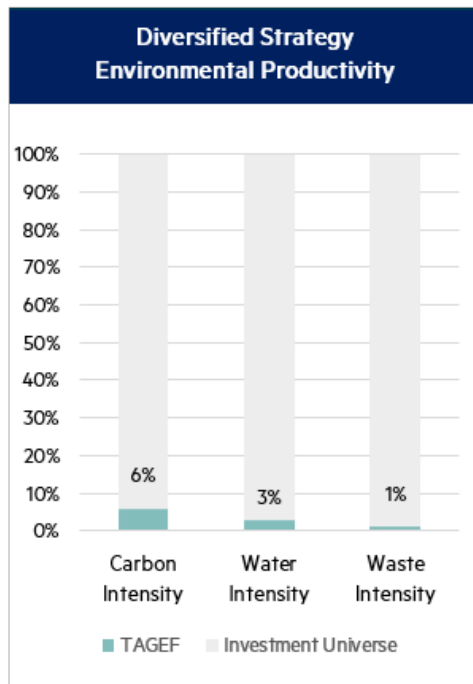


Figure 4. Terra Alpha diversified strategy intensity measures as of year-end 2024

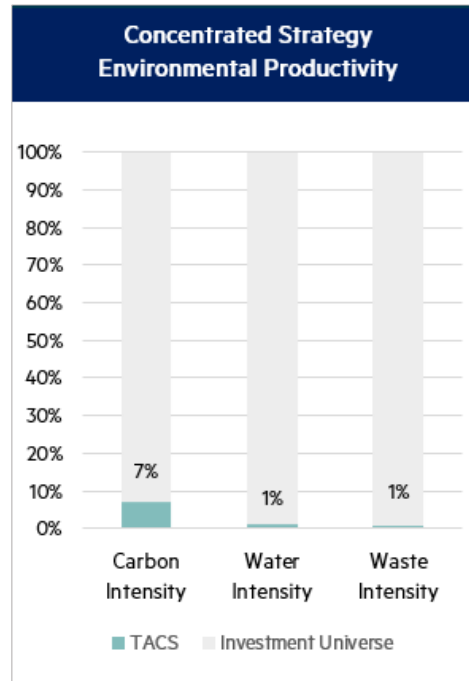


Figure 5. Terra Alpha concentrated strategy intensity measures as of year-end 2024

## Cumulative Portfolio Environmental Impact

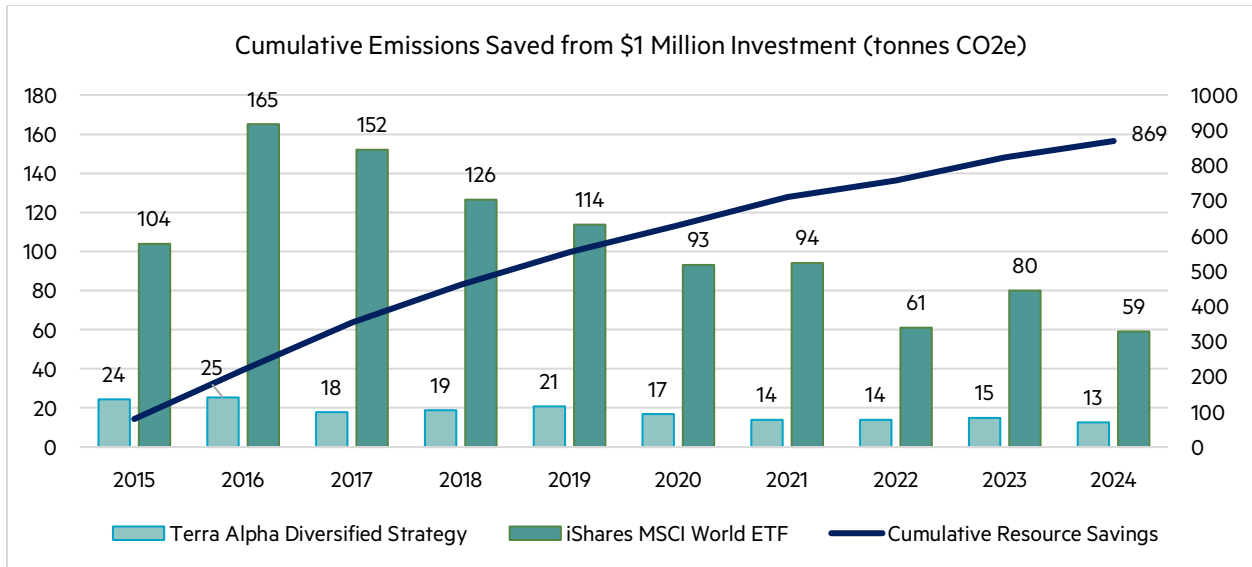
We calculate our funds' carbon, water, and waste impacts (e.g., the resources our funds are "responsible" for via our investment in companies) on an annual basis. Below we show the cumulative impacts through 2024 of our global diversified strategy as compared to a standard global index. Due to data disclosure limitations, some portfolio footprint measurements include the use of estimated data where corporate-disclosed data is unavailable. The data for 2023 was restated to reflect updated information from companies.

*Methodology note: The metrics provided within this section reflect an equity-only approach to measurement. That is, the percentage of ownership is determined by using market capitalization information rather than enterprise value information. For more information around our financed emissions (aligned with [PCAF](#) methodology), please refer to the section Firm Initiative Updates: Low Carbon Economy: Priorities and Progress.*

### Carbon

In 2024, based on a \$1 million investment, our diversified strategy financed 79% fewer emissions than the global index; thereby, avoiding 47 tonnes of CO<sub>2</sub>e (Scope 1 and 2 emissions). Cumulatively since the strategy's launch in May 2015, based on a \$1 million investment, the strategy has financed 83% fewer emissions than the global index, avoiding 869 tonnes of CO<sub>2</sub>e. Please note that the 2024 calculation uses 2023 emissions data, as 2024 emissions data is not yet available.

**Figure 6** below shows the cumulative annual GHG emissions (measured by CO<sub>2</sub>e) avoidance from a \$1 million investment in Terra Alpha’s diversified strategy vs. the same dollar invested in the iShares MSCI World ETF.

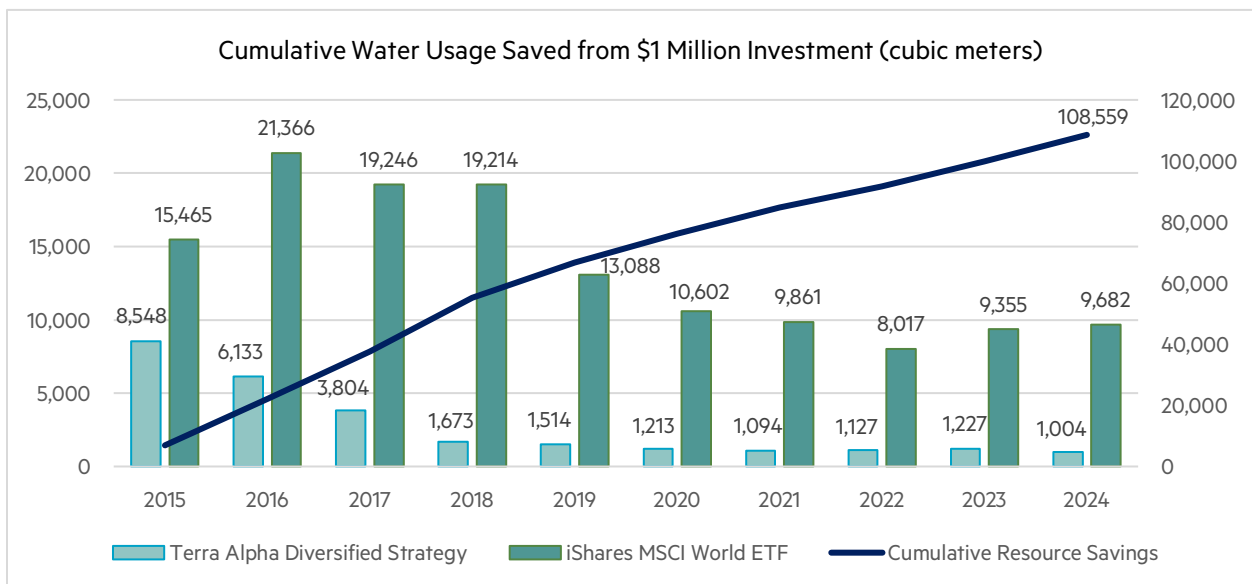


**Figure 6.** Source: Terra Alpha Investments

### Water

In 2024, based on a \$1 million investment, our diversified strategy financed 90% less water usage than the standard global index, avoiding nearly 8,700 cubic meters of water withdrawals. Cumulatively since the strategy’s launch in May 2015, based on a \$1 million investment, the strategy has financed 80% less water withdrawals than the global index; thereby, avoiding over 108,000 cubic meters of water withdrawal. *Please note that the 2024 calculation uses 2023 water data, as 2024 water data is not yet available.*

**Figure 7** below compares the cumulative annual water withdrawals (cubic meters) associated with a \$1 million investment in Terra Alpha’s diversified strategy vs. the same dollar amount invested in the iShares MSCI World ETF.



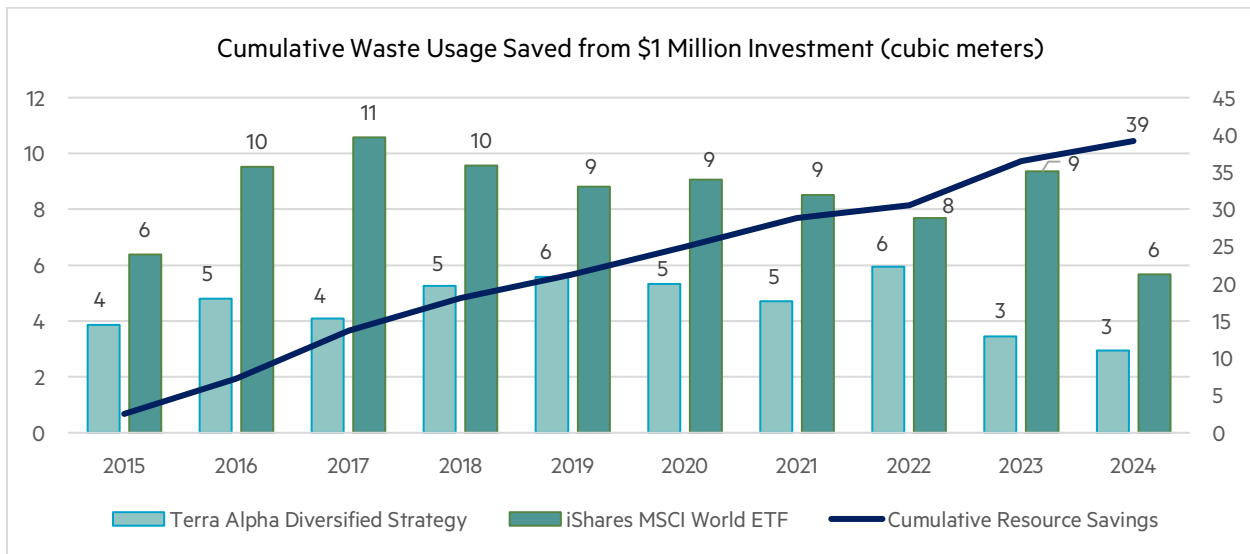
**Figure 7.** Source: Terra Alpha Investments



## Waste

In 2024, based on a \$1 million investment, our diversified strategy financed 48% less waste generation than the standard global index, avoiding 2.7 metric tons of waste generation. Cumulatively since the strategy's launch in May 2015, based on a \$1 million investment, the strategy has financed 46% less waste generation than the global index; thereby, avoiding 39 tonnes of waste. *Please note that the 2024 calculation uses 2023 waste data, as 2024 waste data is not yet available.*

**Figure 8** below compares the cumulative annual waste generation (tonnes) associated with a \$1 million investment in Terra Alpha's diversified strategy vs. the same dollar amount invested in the iShares MSCI World ETF.



**Figure 8.** Source: Terra Alpha Investments

## Portfolio Reporting on Social & Governance Factors

As reflected previously within the Firm Initiative Updates: Diversity, Equity, and Inclusion section of this report, we have formally added diversity, equity, and inclusion analysis into our Enduring Business Model framework to assure that each analyst incorporates this information into their assessment of a company's governance, management, and human capital.

Building upon the more formal commitment to research and reporting on diversity, equity, and inclusion that we made in 2021, we are now able to track progress over time. Below is a selection of the metrics we track at the portfolio level. In these categories, and in many others, our portfolio companies made progress toward improving their diversity, equity, and inclusion.

Disclosure Item	2021	2022	2023	2024
Boards with >33% Female Members	64.6%	67.7%	69.2%	68.8%
Conducts Global Gender Pay Equity Analysis	44.6%	50.8%	50.8%	50.0%
Boards with >75% Independent Directors	66.2%	67.7%	61.5%	67.2%

Disclosure Item	2021	2022	2023	2024
<a href="#">EEO-1</a> Disclosure (US Companies Only)	62.5%	86.7%	90.3%	90.0%
Avg. % Ethnic Diversity on Board of Directors (US Companies Only)	23.1%	24.3%	26.3%	26.9%
Avg. % Ethnic Diversity on Executive Teams (US Companies Only)	19.2%	21.5%	26.7%	23.7%

**Table 2.** Year-end 2021, 2022, 2023 & 2024 Sample Diversity, Equity, and Inclusion Metric Disclosure from TAI Portfolio Companies

## VI. Corporate Engagement Impact

At Terra Alpha, we want our work to catalyze capital markets and companies to value sustainable business activity that results in successful investments for our portfolio. Our intention from the beginning has been to have **an integrated approach to our investment process and our engagement work**. Our engagements continue to flow from our investment research and analysis to identify and prioritize material engagement priorities, and are guided by our Engagement Strategy, Engagement Escalation Policy, Proxy Voting Guidelines and Policy, and our diversity, equity, and inclusion frameworks and governance considerations. We made progress in our engagement goals in 2024, and are focused on the 2025 plans already in progress.

In the 2024 Impact Report's coverage period we:

- + Continued to engage on science-based targets for emissions and transition plans to achieve them, (as of March 31, 2025, coverage stands at 84%),
- + Continued direct engagements with our portfolio companies, ending the year with well over 100% engagement,
- + Continued to encourage better operational efficiency with natural resources, plans to achieve such, disclosure, and identifying and managing risks and opportunities around emissions reductions, water, waste, workforce factors, and governance considerations,
- + Launched a concerted water campaign that addresses a set of specific concerns, requests for disclosure, and for performing a Water Risk Assessment,
- + Progressed our engagement campaign on data centers' resource-use impacts,
- + Remained focused on keeping companies to a high standard on diversity, equity, and inclusion factors, and
- + Advocated on Capitol Hill with federal policy lawmakers and regulators to support sustainability investments and initiatives, as we know that the policy environment affects how companies operate.

### Quantifying our engagement interaction:

- + We had 119 engagements<sup>5</sup> with companies over the 2024 Impact Report period.
- + 54 were meaningful interactions on topics we have identified as **priorities for engagement** specific to that company, which often included engaging around our water campaign.
- + Many were engagements related to our **continued portfolio-wide science-based target (SBT) campaign**. We are focused on making progress with the 16% of companies who have yet to set and verify targets.

**Overall in our engagement work we continue to push for the outcomes that are important for society and the planet and our portfolio companies' long-term sustainability and success.** We recognize that as we take our engagement work into 2025, there will be changed regulations and challenges, though our direct engagement with companies is focused on material operational impacts, not simply company adherence to regulatory requirements or lack thereof.

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<sup>5</sup> We do not count a perfunctory answer to clarifying financials questions as an engagement. A Meaningful Engagement needs at least a substantive answer to probing questions, if not a robust conversation, and a better sense of the company's intended actions.

Below, we dive into specific engagement areas and insights surrounding our thematic campaigns around science-based targets, water, and data centers, as well as our waste strategy, and insights into our proxy voting record.

## Thematic Engagements

### 1. Science-Based Targets Campaign

As elaborated earlier in this report, we continue to raise our preference for validated SBTi targets and robust plans to achieve them with those companies in our portfolio that are not yet part of this group. We began our SBT campaign at a baseline in 2020 with less than half (43%) of our portfolio holdings having validated SBTs, and at year-end 2024, 76% of our portfolio holdings had set validated science-based targets to reduce their emissions.

As the first US-based asset manager to set science-based targets validated by SBTi, we surpassed our 2025 commitment of 75% of the portfolio to have SBTs, which enabled us to set an even more ambitious goal of 80% by year end 2024. While we did not achieve our intention to reach 80% by year-end 2024, we remain proud of the fact that we achieved our original 75% by 2020 target early, and **as of March 31, 2025, we are pleased to have achieved 84% coverage.**

Despite hitting this milestone, there is work to be done to reach our 2030 goal of 95%.

### 2. Water Campaign

Terra Alpha views water as a critical business issue for all companies, and as such, we strive to have all portfolio companies be engaged in their use of and impact on global freshwater resources. Key threats to groundwater – such as eutrophication, depletion, metals contamination, and plastic pollution – pose significant risks to the environment and human health. **Without deliberate management of our limited water resources, businesses, supply chains, livelihoods, and infrastructure face serious vulnerabilities.**

Further, climate change disrupts global water cycles, influencing precipitation and weather patterns that are already impacting business in their value chain. According to CDP's May 2022 article, [High and Dry: How Water Issues Are Stranding Assets](#), "69% of listed equities, reporting via CDP, state that they are exposed to water risks that could generate a substantive change in their business. The potential value at risk tops out at US \$225 billion."

Since our founding in 2015, Terra Alpha has considered companies' attention to water-related issues and asked companies to disclose water data. Building on this foundation, we launched a concerted water campaign this past year that addresses a set of specific concerns, requests for disclosure, and for performing a Water Risk Assessment (WRA). Led by Investment Analyst and our Resident Expert on Water, Marissa Oliveri, and Director of Corporate Engagement, Amy Dine, we utilized our dashboard that tracks water-related metrics and engaged with each of our portfolio companies, focusing particularly on the "laggards" that either do not disclose water data or conduct WRAs. Terra Alpha views such disclosures as investment-critical for understanding business use and impact of freshwater resources, and for assessing the level of risk a business faces.

We also engaged with the “leaders” in our portfolio who do disclose such data, as we recognize that no company is “perfect” at this time. These engagements revolved around target-setting and plans to achieve those targets.

The portfolio-wide water campaign had a high rate of immediate responses to customized letters sent to portfolio companies in September, and as a result, we met with over 20% of our companies about Water in the fourth quarter. We are focused especially on moving the needle for companies we have deemed “laggards” – those who are behind their industry peers by providing weak to no water risk assessment or have not disclosed operational water data. The good news is that this category was only about a third of our portfolio at the launch of our Water campaign in the third quarter, as 69% of our portfolio have conducted and disclosed a Water Risk Assessment. We heard back within the fourth quarter from 45% of the laggards and are going forward to understand the evolution of each company’s plans.

As part of this campaign, we will continue to engage with companies, monitor their progress, and escalate our communication efforts as needed. For more detailed information on our approach and expectations regarding water, please refer to the two-page document shared with our portfolio companies, located in **Appendix 3**.

### Water Campaign Portfolio Impact Measurement Thus Far

**Response from Most Concerning**     **50%** engagement with the laggards. (Laggards make up ~30% of the portfolio)  
*(Escalation engagement plans being executed in Q2 2025 for the 50% who gave zero response)*

**Robust Response**     **20%** of all companies provided robust / detailed email response to engagement letter

**Meeting Held with Terra Alpha**     **25%** of all companies had meeting since receiving our letter

*Table 3. Source: Terra Alpha Investments*

## 3. Data Center Campaign

Data centers are essential to modern infrastructure, powering everything from cloud storage to artificial intelligence. As digital demand rises, so does their energy consumption. **The rapid expansion of data center capacity is outpacing renewable energy supply in many regions, leading to increased reliance on fossil fuels.** While nuclear power is a viable clean energy option, this requires long-term preparation. Without swift action to scale all forms of clean energy, the damage from climate change escalates.

In 2023, Terra Alpha launched our initial research investigation and engagement campaign about data center energy and water usage, and in 2024 we actively delved deeper into the issue. In April, Senior Investment Analyst, Nathaniel Schwartz, was an invited speaker and panelist at the Datacloud ESG Summit in Reykjavik, Iceland, where he delivered a [keynote presentation](#) covering an investor's perspective on the balance of growth and

sustainability within the data center industry. He also learned from the other speakers and attendees about their experiences with renewable energy procurement, operational best practices, and industry disclosure.

Throughout 2024, Nathaniel, our Director of Corporate Engagement, Amy Dine, and our Senior Investment Analyst and Director of Research, Julianna Brunini, also sent letters and began direct engagements with portfolio companies that have meaningful exposure to data center expansion. They requested more information on how each company plans to achieve their stated emissions goals amid rapid data center capacity growth, or on how they may be impacting natural resources and emissions through its products involved in data center expansion. Additionally, they outlined Terra Alpha's recommendations for enhancing their Environmental Productivity.

In December, Terra Alpha published an EP Insight on [Alphabet Inc.](#)'s efforts to align future data center growth with renewable energy through innovative partnerships. While their commitment to progress is a step in the right direction, we recognize urgent action is still needed by Alphabet and across the industry.

Terra Alpha's engagement focus continues not only with companies driving the data center usage growth – think technology companies who provide cloud computing and storage space and have been promoting their artificial intelligence (AI)-based growth – but also with companies that are integral to the construction of the data centers themselves. Our engagement with companies that play a role in this massive energy-using “sub-industry” continues, and we are encouraging renewable energy sources, non-fossil fuel sources, and an attention to the water systems impacts in communities where they operate.

## 4. Waste Strategy

In 2024, we focused on companies' plastic usage as a business and investor issue. **Plastic is a material with significant, harmful production and usage impacts. As a fossil fuel-based derivative, plastic production contributes to overall GHG emissions, and its usage has created a long-term waste problem.** As an investor, Terra Alpha expects companies to be conscientious and efficient in the use of materials overall in their value chain, throughout business operations, and in sold products, as well as address the impacts these materials have when they become waste for society; as these impacts ultimately can affect business operations in future. We believe thinking about the life cycle impacts of material inputs, packaging materials, and product content – particularly for plastic – **are key stewardship actions that will contribute to the durability of a company's long-term sustainability and success.**

We are focused on the ~75% of the portfolio where plastic is a consequential part of a company's operations and/or product. **Our goal is to encourage disclosure and support solutions for reducing plastic across the value chain.**

We derived some of our framework from the late-2024 Global Plastics Treaty negotiations and will continue to follow its developments as we engage with companies on the material business issues around plastic in 2025.

For more details, please refer to **Appendix 4.**

## Third Party Assessment of Terra Alpha Impact

### The Russell Family Foundation



In 2024, Terra Alpha was proud to welcome [The Russell Family Foundation](#) (TRFF) as an investor. Aligned in our shared commitment to sustainability, we look forward to advancing the transition to a net-zero economy together. In the article below, TRFF shares how they use their investment portfolio as a tool to work toward their goal of reaching net zero by 2030, and building

a sustainable and equitable future for all.

Both Terra Alpha and TRFF are driven by mission-aligned investing, and this partnership reflects our mutual commitment to advancing sustainability through strategic investments.

Read more in [TRFF's case study on Terra Alpha](#), detailing how investing with a purpose can drive meaningful change in our economy and environment.

*The Russell Family Foundation is a private family foundation that is focused on creating a thriving, equitable, and sustainable Earth. Their mission is to invest in people and places to advance environmental sustainability and address the climate crisis.*



### Impact Evaluation Lab



In 2024, we were one of thirteen firms selected to be in the first group assessed by [Impact Evaluation Lab](#) in an effort to create a new framework for evaluating impact investing.

Using their [Impact Authenticity Score](#), we were rated as an 87 out of a maximum score of 100, amidst an average score of 90, with an execution score of 97/100 versus an Average Execution Score of 83. We were recognized for having **“rigor and thoroughness in incorporating impact throughout the investment process.”**

We encourage our readers to visit [Impact Evaluation Lab's website](#) to learn more about the evaluation process.

## Proxy Voting Record

Voting our shares continues to be a foundational expectation of our shareholder engagement and fiduciary responsibility on behalf of our investors. We vote at all shareholder annual meetings except in cases where the international local structure for holding shares prohibits it. We vote according to our internal Proxy Voting Policy and use Glass Lewis as our administrator to execute our votes. We retain the final say for every vote.

From January 1, 2024 through December 31, 2024 Terra Alpha participated in 1074 votes. We voted with management 750 times, against management 61 times, took no action 261 times, and had zero votes that were mixed. We voted against management on social and environmental proxy items in 1% of votes (10/1074), and 5% of the votes were against management on governance topics (51/1074). Our votes aligned with Glass Lewis's own recommendations 764 times, and against Glass Lewis's recommendations 49 times.<sup>6</sup>

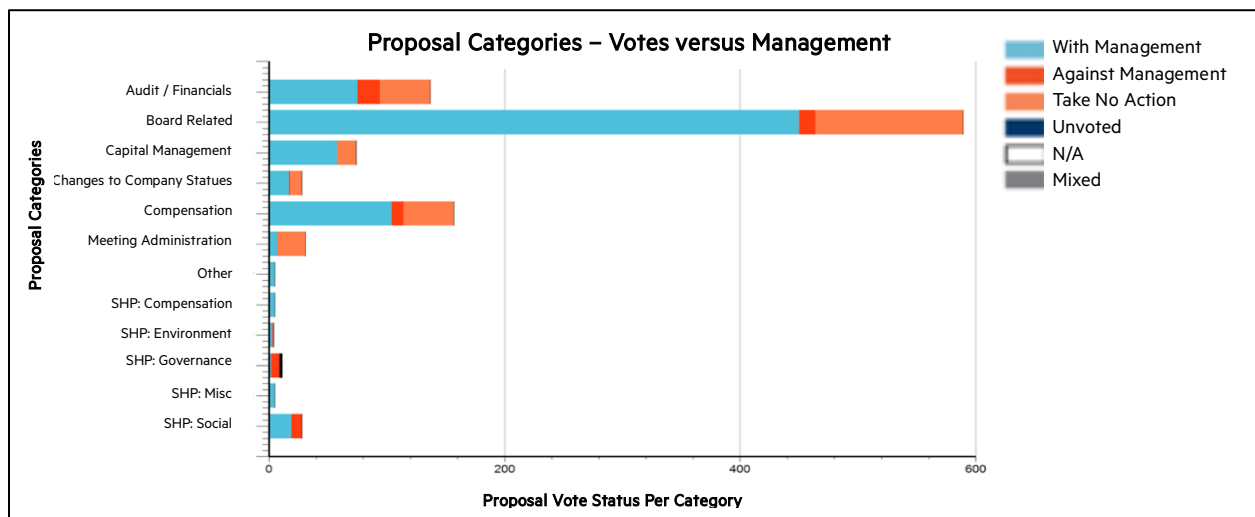


Figure 9. Terra Alpha's 2024 proxy voting record as compared to management.

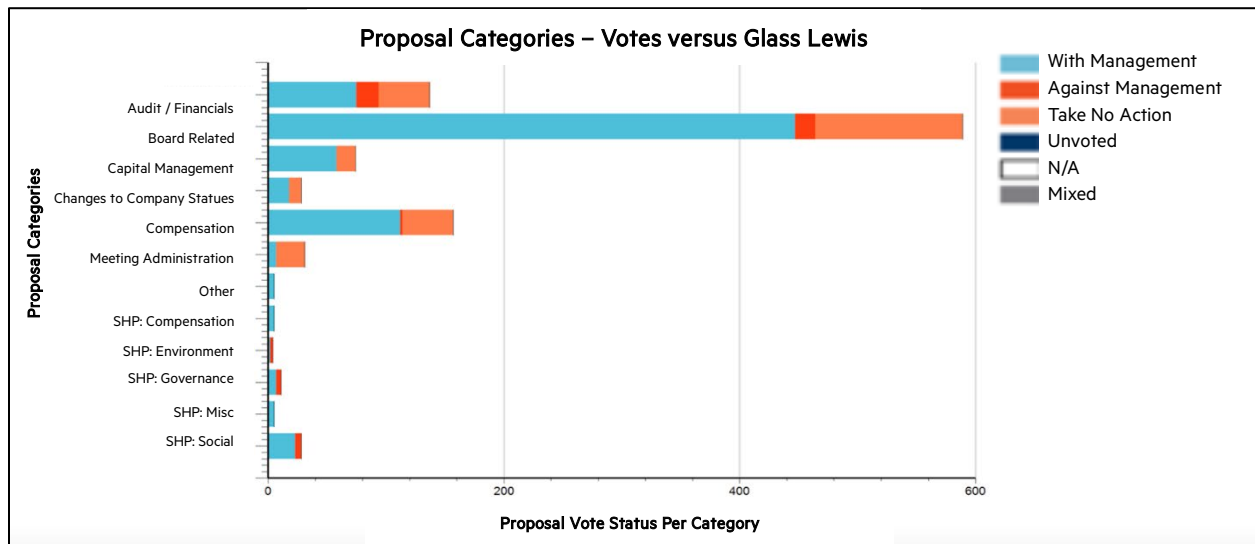


Figure 10. Terra Alpha's 2024 proxy voting record as compared to Glass Lewis.

<sup>6</sup> Took No Action typically means in country markets where we are not able to vote our shares, and Mixed votes are typically when there is more than one ballot, often in a contested vote.



## VII. Thought Leadership

### Public Advocacy

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A key component of our Thought Leadership pillar is engaging in public advocacy. Advocating for broader adoption of sustainability considerations in the capital markets and in public policies that support expansion and standard-setting has been part of Terra Alpha's tenets from the beginning. This past year we continued to support and take part in collaborative public policy efforts, including:

#### Public Advocacy

##### Elected Officials Advocacy

We worked with the [US Sustainable Investment Forum](#) (US | SIF) and [Ceres](#) to advocate in person to federal government officials and staff on the importance of the freedom to invest with sustainable investing principles. We also supported the previous administration's acts endorsing green energy investments – especially encouraging the need for more transmission lines and clean energy utilities expansion to support growing energy demands, particularly the significant renewable power needs of data centers. We met with a handful of Senate and House offices from both Republican and Democratic parties.

##### Response to Congressional Committee Communication

Twice in 2024 Terra Alpha received a letter from the House of Representatives' Judiciary Committee. The first wanted an explanation of our involvement in the Climate 100+ group, and the second asked for an explanation about our involvement with the Net Zero Asset Managers Initiative. We responded to each and have had no follow-on requests from either.

##### Advocacy Impact with US Congress

As part of our impact work, we advocated to Members of Congress on matters that are significant for the companies in our portfolio and relevant in their particular districts/states, and voiced our confidence in our investment approach, our commitment to sustainability attributes we hope to see in companies everywhere, and how government action can support companies to thrive with these in mind.

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## Publications Throughout the Year

### EP Insights

In our [EP insights](#), we identify meaningful company actions or broader issues that are relevant to the transition to a sustainable economy.

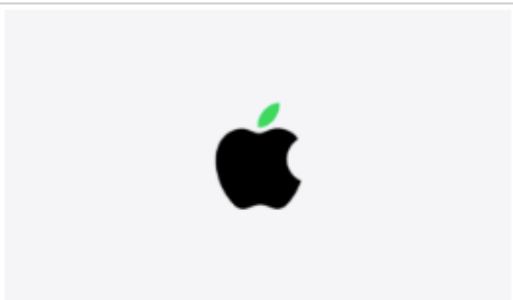
In 2024 we published the following EP Insights:



**EP Insight, May 2024 | Vestas: Low-Emission Steel**



**EP Insight, June 2024 | adidas: Recycled Polyester**



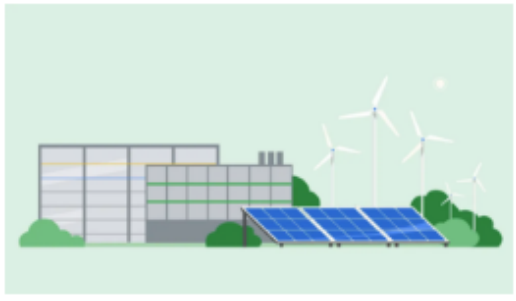
**EP Insight, September 2024 | Apple: Electronic Waste**



**EP Insight, September 2024 | Waste Management: CORE®**



**EP Insight, December 2024 | Zillow: Climate Risk Data Integration**



**EP Insight, December 2024 | Alphabet: Navigating Global Data Demand vs. Net Zero Commitments**

## Terra Alpha Voices

In November 2020, we launched [Terra Alpha Voices](#), a series of interviews created in partnership with author and photographer [KK Ottesen](#). Terra Alpha Voices highlights thought leaders who inform our investment process, our impact work, and our understanding of current global affairs, and the series seeks to shed light on the subjects' diverse perspectives rather than their illustrious careers.

In 2024 we published the following Terra Alpha Voices, featuring true thought leaders:



### **Terra Alpha Voices | Lisa Renstrom & Bob Perkowitz**

Environmental leaders, impact investors, and wife-husband duo.

[Read More >](#)



### **Terra Alpha Voices | Julie Broaddus**

Julie Broaddus, owner and operator of the independent, environmentally-focused Old Bust Head Brewery in Vint Hill, Virginia, reflects on the legacy of her daughter, Finley Broaddus.

[Read More >](#)



### **Terra Alpha Voices | Kate Williams**

Kate Williams, CEO of 1% for the Planet, discusses how the organization is empowering businesses to drive purposeful environmental progress.

[Read More >](#)



### **Terra Alpha Voices | Justin "Chester" White**

Chester White, Founder & CEO of LTMA Capital and Main Line Social, discusses how businesses can drive social change, empower individuals, and create lasting, scalable impact in communities around the world.

[Read More >](#)

## Collaborating and Supporting Intellectual and Environmental Organizations

We partner with several peer-to-peer learning organizations to facilitate conversations and collaboration across a wide breadth of sustainability initiatives. Through these partnerships, we have formed meaningful connections to like-minded professionals, shared our expertise with a broader audience, and signed on to shared commitments that align with our mission and amplify our voice. We enter each partnership with intentionality, as we hold ourselves and these networks to the high standards necessary to create a better world. Through [1% for the Planet](#), we have committed to sending profits to environmental organizations and have sent over \$90,000 as of 1Q 2025. (See the box below for further information).

Terra Alpha was fortunate to actively contribute to several organizations throughout the year, including:

- + [US Sustainable Investment Forum](#) (USISIF)
- + [Principles for Responsible Investment](#) (PRI)
- + [Confluence Philanthropy](#),
- + [Ceres](#),
- + [CDP](#) (formerly Carbon Disclosure Project),
- + [1% for the Planet](#), and
- + [Intentional Endowments Network's](#) (IEN)



[1% for the Planet](#) is an international organization whose members contribute at least one percent of their annual revenue to environmental causes to protect the environment.

Terra Alpha has been a member of 1% for the Planet since 2017 and has committed to sending profits to environmental organizations. As of 1Q 2025, we have donated **over \$90,000** to nonprofits, including:

- + 1% for the Planet
- + CDP (formerly Carbon Disclosure Project)
- + Ceres
- + Columbia Earth Institute
- + Confluence Philanthropy
- + Intentional Endowments Network (IEN)
- + Sustainability Accounting Standards Board (SASB)
- + UN Principles of Responsible Investment (PRI)
- + US Sustainable Investment Forum (US | SIF)
- + World Resources Institute



## Education, Transparency, and Reporting

In 2024, Terra Alpha continued to engage with other investors and investment industry stakeholders on climate-related topics. Our team has also actively contributed as thought leaders as panelists and speakers at events and on podcasts in 2024. Some highlights include:

1. Terra Alpha added an [Advisory Board member, Justin “Chester” White](#), who brings several valuable perspectives to the board, including work experience at a global multinational, a focus on social/labor issues, and a more youthful viewpoint.
2. We have continued to report our “financed emissions” using the [Partnership for Carbon Accounting Financials](#) (PCAF) methodology. (See **Appendix 1** for more details).
3. Co-Founder and CIO, Tim Dunn, and Director of Business Development, Phil Swan, attended the 2024 [Intentional Endowment Network’s](#) Higher Education Climate Leadership Summit in Long Beach, California in February. Terra Alpha was a sponsor of the event.
4. Phil Swan, attended the [Association of Governing Board’s National Conference on Trusteeship](#) in Boston, Massachusetts in March.
5. In April, Senior Investment Analyst, Nathaniel Schwartz, was an invited speaker and panelist at the Datacloud ESG Summit in Reykjavik, Iceland, where he delivered a [keynote presentation](#) covering an investor’s perspective on the balance of growth and sustainability within the data center industry.
6. In May, Director of Corporate Engagement, Amy Dine, joined the [US Sustainable Investment Forum](#) (US | SIF) Capitol Hill Day and members meeting. The lobby day focused on supporting the Inflation Reduction Act implementation and the importance of supporting the grid with renewable power supply, in particular.
7. Nathaniel Schwartz led a weeklong bootcamp that covered equity research basics and financial statement analysis for the [Wall Street Development Accelerator](#) (WSDA).
8. Terra Alpha hosted the leadership of the [National Audubon Society](#) (NAS) for a rooftop event for Terra Alpha investors and friends. NAS CEO [Dr. Elizabeth Gray](#) presented their new strategy (known as the “Flight Plan”) which puts climate change and biodiversity at the forefront of their work.
9. In June, Amy Dine and Manager of Business Development, Emily Hiltz, attended the US | SIF [FORUM 2024](#) in Chicago, Illinois. Terra Alpha was a sponsor of the Forum.
10. Senior Investment Analyst and Director of Research, Julianna Brunini, and Senior Portfolio Manager, Dan Sanborn, were featured speakers on [Intentional Endowment Network’s](#) (IEN) Climate Solutions Series webinar.
11. Tim Dunn made a keynote presentation about Terra Alpha and moderated a panel on family offices + impact at [Accelerate 2050](#) in New York City.
12. Tim Dunn was also a panelist at a [Rockefeller Foundation](#) climate investing seminar in New York City.
13. Tim Dunn, sat down with Paul Ellis on [The Sustainable Finance Podcast](#), a podcast where advisors and investors can learn about sustainable and impact investing from experts in the field. In the episode, Paul and Tim discuss how Terra Alpha approaches sustainable investing and corporate engagement, and works to have impact. [Listen to the full podcast episode here](#).
14. In September, Terra Alpha once again signed the annual [Global Investor Statement to Governments on the Climate Crisis](#), which asks governments across the globe to support regulations and policies to address climate change.
15. Amy Dine led Terra Alpha’s effort in submitting our 2024 Report to [Principles for Responsible Investment](#) (PRI).
16. Nathaniel Schwartz and Tim Dunn attended and shared our perspectives on the GHG emissions and water impact from data centers at a community meeting held by the [Piedmont Environmental Council](#).
17. Nathaniel Schwartz attended the S&P [Datacenter and Energy Innovation Summit](#) in Washington, D.C.
18. Research Analyst, Roshni Puli, attended Innovation Forum’s [Sustainable Packaging Innovation Forum](#) in Philadelphia, PA.

19. Tim Dunn was a session panelist at [Gratitude Railroad](#)'s gathering in Santa Cruz, CA, where he spoke on the current politics and trends in sustainable investing.
20. Amy Dine, attended the [Intentional Endowments Network](#)'s 10 Year Anniversary Gala Dinner in Boston, MA.
21. Tim Dunn attended the [CFA Society of Washington](#)'s Impact Investor reception.

## VIII. Conclusion

As we conclude this year's Impact Report, we reflect on the progress Terra Alpha has made in 2024 and the work still to be done. We remain focused on enabling a sustainable planet for society **in a science-driven, caring, rigorous, and transparent manner** with our investment strategies that deliver not only competitive financial returns, but also superior environmental outcomes and real-world impact.

This 2024 Impact Report highlights our continued efforts to shift capital markets in the past year, and we remain firmly committed **to driving the corporate sector toward success and aligned with our planet's natural resources boundaries.**

Looking ahead, we recognize that the regulatory and political environment may present challenges, but we continue to have confidence in our investment strategy and selection process, our portfolio holdings, and the efficacy of our engagement efforts, to continue to demonstrate that sustainable business practices can drive long-term success for both corporations and investors.

As we celebrate Terra Alpha's tenth year in 2025, the work we've outlined in this report will serve as the foundation for continued impact.

*We greatly appreciate the trust our investors have placed in us as a firm and the collaborative support we have received from other entities (NGOs, academics, etc.). We welcome any questions or feedback about this report and our overall impact work.*

## IX. Appendices

### Appendix 1: Calculation of Financed Emissions

An investment manager’s share of its portfolio companies’ emissions – i.e., the manager’s emissions from investing activities – is referred to as its “financed emissions.”

#### *Methodology*

Terra Alpha’s financed emissions calculations are based on the publicly available guidelines in: [PCAF \(2022\). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second Edition.](#)

The [Partnership for Carbon Accounting Financials](#) (PCAF) is an industry partnership that has developed standardized methodologies for financial firms to measure their financed emissions – i.e., the emissions associated with their investing and lending activities. The [GHG Protocol has reviewed](#) the PCAF Standard to be in conformance with its expectations for reporting Scope 3 – Category 15 (emissions from investing activities).

#### *Definition of “Financed Emissions”*

Per page 55 of the PCAF Standard (2022, Second Edition), the financed emissions associated with equity investments are defined as:

$$\text{Financed emissions} = \sum_c \text{Attribution factor}_c \times \text{Company emissions}_c$$

(with  $c = \text{borrower or investee company}$ )

#### **For listed companies:**

$$\text{Attribution factor}_c = \frac{\text{Outstanding amount}_c}{\text{Enterprise Value Including Cash}_c}$$

The “**outstanding amount**” refers to the market value of Terra Alpha’s investment in the portfolio company at year-end. As such, the “**attribution factor**” approximates the percentage of total debt and equity value owned by Terra Alpha at year-end. By multiplying our percentage ownership of each portfolio company by the portfolio **company emissions**, we estimate Terra Alpha’s share of its emissions. Summing across all our portfolio company holdings results in our “**financed emissions**” estimate.



### Financed Emissions 2019-2024

**Table 4** shows our financed emissions for the years 2019 to 2024. By definition, the financed emissions metric increases when (1) we increase our ownership in a company by purchasing more of its stock, and/or (2) the portfolio company increases its absolute emissions. Thus, the change in financed emissions between any two years is a combination of those two effects.

**Table 5** shows financed emissions normalized to Terra Alpha AUM (“economic emissions intensity”) and to portfolio company revenue (“average carbon intensity” and “weighted average carbon intensity”). For technical definitions of additional carbon intensity metrics, see **Appendix 2**.

Financed Emissions - PCAF Methodology	2019	2020	2021	2022	2023	2024*
<b>Diversified Strategy</b>						
Financed Emissions (Scope 1)	480.30	489.66	511.24	538.96	667.32	607.03
Data Quality Score (Scope 1)	1.12	1.10	1.09	1.08	1.08	1.10
Financed Emissions (Scope 2)	383.66	365.00	337.13	377.69	578.91	526.57
Data Quality Score (Scope 2)	1.26	1.34	1.29	1.34	1.35	1.36
Financed Emissions (Scope 3)	N/A	20,432.26	28,030.01	34,785.77	46,911.83	44,265.60
Data Quality Score (Scope 3)	N/A	2.27	1.95	1.70	1.62	1.68
<b>Financed Emissions (Scopes 1 &amp; 2)</b>	<b>863.96</b>	<b>854.65</b>	<b>848.37</b>	<b>916.65</b>	<b>1,246.23</b>	<b>1,133.60</b>
<b>Financed Emissions (Scopes 1, 2, &amp; 3)</b>	<b>N/A</b>	<b>21,286.91</b>	<b>28,878.38</b>	<b>35,702.42</b>	<b>48,158.06</b>	<b>45,399.20</b>
<b>Concentrated Strategy</b>						
Financed Emissions (Scope 1)	N/A	256.95	510.71	462.32	438.85	403.13
Data Quality Score (Scope 1)	N/A	1.05	1.05	1.05	1.03	1.02
Financed Emissions (Scope 2)	N/A	118.60	182.74	183.71	189.68	186.00
Data Quality Score (Scope 2)	N/A	1.30	1.27	1.05	1.03	1.02
Financed Emissions (Scope 3)	N/A	6,777.22	9,356.82	14,086.75	7,786.66	14,351.14
Data Quality Score (Scope 3)	N/A	2.21	1.80	1.27	1.31	1.33
<b>Financed Emissions (Scopes 1 &amp; 2)</b>	<b>N/A</b>	<b>375.55</b>	<b>693.45</b>	<b>646.04</b>	<b>628.54</b>	<b>589.13</b>
<b>Financed Emissions (Scopes 1, 2, &amp; 3)</b>	<b>N/A</b>	<b>7,152.77</b>	<b>10,050.27</b>	<b>14,732.79</b>	<b>8,415.20</b>	<b>14,940.27</b>
<b>Total (Diversified Strategy + Concentrated Strategy)</b>						
Financed Emissions (Scope 1)	N/A	746.60	1,021.95	1,001.28	1,106.18	1,010.16
Financed Emissions (Scope 2)	N/A	483.60	519.87	561.41	768.59	712.57
Financed Emissions (Scope 3)	N/A	27,209.48	37,386.84	48,872.52	54,698.50	58,616.74
<b>Financed Emissions (Scopes 1 &amp; 2)</b>	<b>N/A</b>	<b>1,230.20</b>	<b>1,541.82</b>	<b>1,562.69</b>	<b>1,874.76</b>	<b>1,722.73</b>
<b>Financed Emissions (Scopes 1, 2, &amp; 3)</b>	<b>N/A</b>	<b>28,439.68</b>	<b>38,928.65</b>	<b>50,435.21</b>	<b>56,573.26</b>	<b>60,339.47</b>

**Table 4.** Terra Alpha's Financed Emissions, 2019-2024.

\*2024 is calculated using year-end 2024 portfolio constituents and their 2023 emissions data (which is the most recent data available as of this writing).

Additional Portfolio Metrics	2019	2020	2021	2022	2023	2024*
<b>Diversified Strategy</b>						
Weighted Average Carbon Intensity (scopes 1 & 2)	46.08	47.16	39.55	36.54	32.90	37.48
Average Carbon Intensity of Holdings (scopes 1 & 2)	46.51	46.34	40.31	36.30	33.79	36.73
Economic Emissions Intensity (scopes 1 & 2)	16.12	12.12	10.05	12.35	10.83	9.19
<b>Concentrated Strategy</b>						
Weighted Average Carbon Intensity (scopes 1 & 2)	N/A	70.50	65.92	57.18	55.26	51.19
Average Carbon Intensity of Holdings (scopes 1 & 2)	N/A	69.67	61.55	52.33	48.63	47.00
Economic Emissions Intensity (scopes 1 & 2)	N/A	15.94	14.90	13.31	11.44	9.55
<b>Total (Diversified Strategy + Concentrated Strategy)</b>						
Weighted Average Carbon Intensity (scopes 1 & 2)	N/A	53.09	49.12	44.82	40.17	42.12
Economic Emissions Intensity (scopes 1 & 2)	N/A	13.08	11.77	12.73	11.03	9.31

**Table 5.** Portfolio carbon intensity metrics, 2019-2024.

\*2024 is calculated using year-end 2024 portfolio constituents and their 2023 emissions data (which is the most recent data available as of this writing).

### ***Company Emissions: Data Quality & Recency Notes***

Terra Alpha collected Scope 1, 2, and 3 data for each of our portfolio companies in order to calculate our financed emissions. In many cases, we used human judgment to choose what we believe to be the best data available for this purpose.

Below is the preferential **data quality hierarchy** we applied during data aggregation. The data quality scores stem from PCAF’s guidelines.

- + *First choice: company-reported<sup>7</sup> emissions with external assurance/verification (data quality score = 1)*
- + *Second choice: company-reported emissions without external assurance/verification (data quality score = 2)*
- + *Third choice: third-party or Terra Alpha estimated data (data quality score = 4).*

**Use of restated data:** Many of our portfolio companies have restated their historical emissions data at one point or another, due to, for example, acquisitions, divestitures, improvements in emissions estimation methodology, or updates to standardized emissions factors used in their calculations. Generally, Terra Alpha utilized the most recently restated data available at the time of our data collection. For example, if Company A’s 2023 emissions data appeared in a longitudinal data series with restated 2022 and 2021 emissions, we generally used the 2022 and 2021 restated historical data points for improved year-over-year comparability to 2023.

**Time lag:** For our 2024 portfolio holdings, the most recently disclosed company emissions data is typically from the calendar year 2023. As such, our 2024 financed emissions disclosures are “preliminary,” because we will update them to reflect the 2024 calendar year company emissions when such data is widely available.

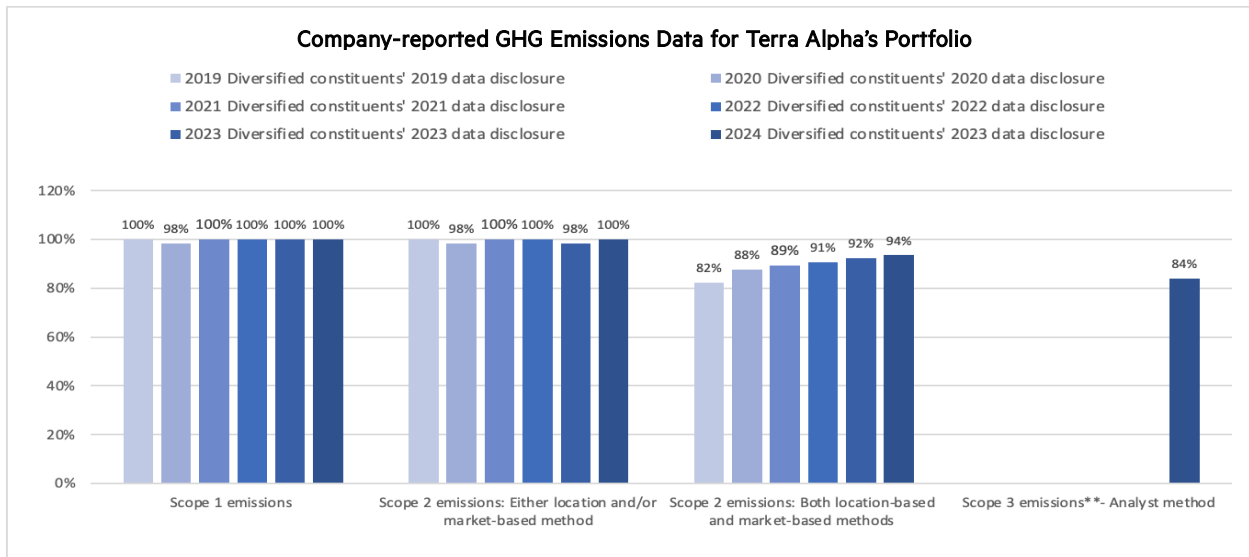
#### *Mapping of the most recently available emissions data for Terra Alpha’s financed emissions calculations:*

Terra Alpha portfolio composition	<b>CY 2024 holdings</b>	CY 2023 holdings	CY 2022 holdings	CY 2021 holdings	CY 2020 holdings
Most recent company-reported data available	CY 2023 emissions data	CY 2023 emissions data	CY 2022 emissions data	CY 2021 emissions data	CY 2020 emissions data

**Market-based vs. location-based (Scope 2):** Terra Alpha uses location-based Scope 2 data whenever available, unless otherwise noted. If location-based data was unavailable, market-based Scope 2 data is used instead.

<sup>7</sup> By “company-reported,” we mean emissions data sourced from one of the following: a company’s annual report, sustainability report, or CDP Climate Change Survey.

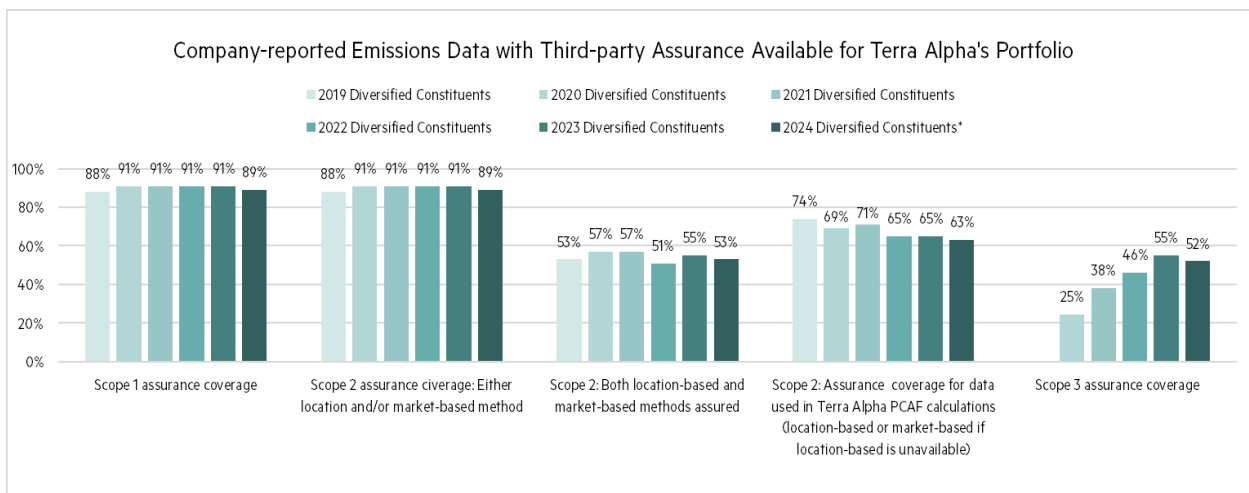
### Data Availability and Quality: Portfolio Companies' Scope 1, 2, and 3 Emissions



**Figure 11.** Scope 1, 2, and 3 emissions disclosure trends

\*The most recent data available as of this writing for our 2024 portfolio constituents is still data year 2023. Note that our portfolio disclosure KPIs in last year's impact report may not match their corresponding data points in Figure 1 due to companies restating or newly disclosing data for prior years.

\*\*Portfolio constituents' Scope 3 emissions disclosures are reviewed by Terra Alpha's research team to ensure that obviously material categories are not missing from the Scope 3 inventory; if a critical category is missing, Terra Alpha withholds credit for Scope 3 disclosure.



**Figure 12.** Verification of company-reported emissions data.

\*Please note that the most recent data available for our 2024 portfolio constituents is still data year 2023. Note that our portfolio emissions assurance KPIs in last year's impact report may not match their corresponding data points in Figure 1 due to companies restating or newly assuring historical data for prior years.

## Appendix 2: Calculation of Other Carbon-Related Metrics

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### *Economic Emissions Intensity*

The Economic Emissions Intensity calculation divides the financed emissions (as defined in **Appendix 1**) by our firm's assets under management (in \$ millions) as of the end of the reporting year.

### *Average Carbon Intensity of Holdings*

The average carbon intensity of holdings calculates the arithmetic mean of portfolio companies' carbon intensities. A portfolio company's carbon intensity is its Scopes 1 and 2 emissions divided by its annual revenue (in \$ millions). The calculation defaults to using the sum of Scope 1 emissions and location-based Scope 2 emissions for the given year. If location-based Scope 2 emissions data is unavailable, market-based Scope 2 emissions data will be used.

### *Weighted Average Carbon Intensity (WACI)*

The weighted average carbon intensity is calculated via the summation of the product of emissions intensity of each holding, and the end-of-reporting-year weight of the holding within the portfolio. For company emissions, the calculation defaults to using the sum of Scope 1 emissions and location-based Scope 2 emissions for the given year. If location-based Scope 2 emissions data is unavailable, market-based Scope 2 emissions data will be used. If a company is missing the given year's emissions data, then it will use the prior year's emissions data. The emissions data for a company is then divided by the revenue (\$ million) value for the reporting year to form an emissions intensity value.

This metric is recommended by the [Taskforce on Climate-related Financial Disclosures](#) (TCFD) for asset managers (see Table 3, page 52, in [TCFD \(2021\), Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures](#)).

## Appendix 3: Water Campaign 2-Pager



### **Terra Alpha Investments: Expected Water Consideration and Actions in our Portfolio**

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*As shareholder owners, we view freshwater consumption and impact to be business-critical considerations for any company. As such, we have laid out a framework of key areas we assess and monitor at companies we are invested in and are considering as part of our global equity funds.*

#### **Conduct and disclose water risk assessments (WRAs):**

- WRAs help companies identify risks and opportunities for the enterprise based on business activities, location, and context. We expect WRAs to consider not only the company's direct operations, but also all relevant aspects of the value chain. We also expect that the identified physical, regulatory, and reputation risks are evaluated and communicated to shareholders.
- It is necessary to conduct a WRA because they help companies determine where to set targets and act first, help companies analyze environmental significance and societal considerations, evaluate the relationship between water-related issues and how these issues can be a business risk, inform business objectives in the short- to long-term, and begin water stewardship strategy development.

#### **Report necessary and investment-critical water data:**

- We consider the minimum necessary water data disclosure to be water withdrawals, consumption, any instance of noncompliance with regulatory standards, and the percentage of operations in water stressed regions, which is dependent on the findings of the conducted and disclosed water risk assessment.
  - If the company's water risk assessment highlights supply chain water risk as material, we ask that the company disclose the percentage of product/raw materials/commodities sourced from regions with High or Extremely High water stress, to understand the likelihood of disruption.
  - On the water quality side, we expect all companies that impact water quality in operations or through the value chain disclose pollutants of concern, where the pollutants occur in the value chain, and how the company is combating the usage of the pollutants, as water challenges can be reputational risks.
  - To understand dependencies on water resources, it is critical that companies disclose what percentage of operations are exposed to water risk through operating in water stressed regions.
  - For companies choosing not to disclose the above data, it is viewed as necessary that a statement is provided as to why the information is not material.
- We consider it to be best practice for all water data to be assured.

#### **Set water-related targets in-line with best guidance available:**

- We ask that all companies stay up to date with the evolving and improving understanding of water resources and how to best set targets to safeguard these resources while mitigating operational risks.
  - An example of this would be staying up to date with Science Based Target Network's (SBTN) resources and guidance for setting science based freshwater targets for both water quantity and quality. Currently, there is guidance available for the first several steps of the process. The organization will also be releasing updated target setting methods for freshwater in the near future. At this point, companies interested in using target validation services to set science-



## **Terra Alpha Investments: Expected Water Consideration and Actions in our Portfolio**

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based targets for nature can fill out an [expressions of interest form](#) via SBTN.<sup>1</sup>

- Additionally, there are publicly available resources through SBTN, such as [Stakeholder Engagement Guidance](#)<sup>2</sup>, that are helpful for understanding water risks within the catchment context.
- We ask that all companies set targets that are aligned with the findings of stakeholder engagement, specifically with communities around the local catchment.
- In lieu of SBTs for freshwater, companies can apply the methodology, along with methodology from other leading sources to set context-based targets. Context-based water targets go a step further than traditional targets to tackle priority locations and impacted communities through catchment-specific targets, initiatives, and restoration projects.

### **Release a publicly available strategy and plans to achieve water-related targets:**

- We believe companies that credibly meet their water targets will be better-positioned than peers to succeed in the decade ahead.
- Components that make up a robust abatement plan include: intermediary targets to achieve the ultimate necessary abatement, discussion of initiatives/technology/innovation, discussion of priority locations and engagements, investment spend needed to achieve targets, and disclosure of personnel, working groups, and collaborations.
- Ultimately, a robust abatement plan makes it clear to shareholders what actions are taking place, where the actions are taking place, progress towards achieving targets, and that the necessary capex allocation to achieve targets is available.

### **Collaborate, engage, and enable parts of the value chain relating to water impacts**

- After conducting a WRA, we ask that all companies that identify substantive water quantity and quality impacts throughout the value chain engage and enable partners to limit their impact on limited resources. Without companies utilizing their expertise and knowledge of water impacts to help other aspects of the value chain, we will never properly address society's dependencies and impact on water resources.
  - Companies can collaborate with suppliers and other organizations to drive change within the value chain through, for example, developing new technologies and retrofitting spaces with better technologies.
  - Companies can also utilize their knowledge to inform other areas of the value chain of their impact on water resources to highlight the necessity to transform.
  - Further, companies can enable parts of the value chain through funding, sharing innovations, and incentivizing responsible practices.

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<sup>1</sup> <https://sciencebasedtargetsnetwork.org/target-submission-expression-of-interest/>

<sup>2</sup> <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/Technical-Guidance-2023-Stakeholder-Engagement-Guidance-beta.pdf>

## Appendix 4: Waste Strategy

### *Terra Alpha: Plastic as a Material Business Consideration*

At Terra Alpha, we believe sustainable practices can lead to enduring business benefits. As an investor, we view the production of plastic as a fossil fuel derivative contributing to global greenhouse gases, the usage of plastic, and its subsequent generation of pollution as critical business considerations for the long-term success of any company.<sup>8</sup> Opportunity for sustainable practices around plastic is found throughout the value chain, as an input to products or packaging, and in the supply chain across product design through consumer waste management. The Global Plastics Treaty has amplified global awareness and accountability, driving collective action to tackle these challenges of plastic waste and production.<sup>9</sup>

**We value the disclosure of plastic use as material information for an investor.** We believe that disclosure begins with measurement, and the ability to manage the costs and risks associated are derived from this first step. Science-based market leaders initiatives like the Taskforce on Nature-related Financial Disclosures (TNFD), CDP, and the Global Reporting Initiative (GRI), are frameworks that help companies assess their plastic footprint. We have found the CDP annual survey is the most robust disclosure of plastic risk and opportunity.<sup>10</sup>

At Terra Alpha, we hope to see disclosure on the following points:

#### **1. Measure plastics exposure across the entire value chain:**

- + From supply chain inputs, to production, to the packaging of products, plastic waste is a growing operational risk.
- + We believe it is necessary for companies to start measuring their plastic footprint as soon as possible to be best prepared to understand their impact, as well as for disclosure initiatives and future regulatory changes, such as the Global Plastics Treaty.

#### **2. Report and disclose necessary and investment-critical plastic data:**

- + As investors looking at the long-term success of companies, we are looking to assess waste overall as part of our understanding of operational and brand/reputational management, and plastic usage and waste specifically. Formal disclosure provides decision makers with “clear, comprehensive, and comparable data on the production, commercialization, usage, and disposal of plastics across the global economy”.<sup>11</sup>
- + Given the alignment of the relevant disclosures we ask that all companies utilize one or multiple of the CDP, TNFD, or GRI disclosures to conduct at least annual reviews of their plastic-related risk and opportunity.
- + **We consider it best practice for all plastic data to be assured by a third party.**
- + By improving plastic disclosure and reducing their environmental impact, companies can also position themselves as leaders in sustainability and contribute to a more sustainable future for all.

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<sup>8</sup> According to the United Nations Environment Program (UNEP) (2021) and Minderoo Foundation (2021) research, less than 10% of plastic gets recycled annually, and if growth in single-use plastic production continues at current rates, by 2050, they could comprise nearly 5-10% global greenhouse gas emissions.

<sup>9</sup> UNEP's Intergovernmental Negotiating Committee on Plastic Pollution were developed to eventually adopt a historic, legally binding instrument on plastic pollution, including in marine environments (2024).

<sup>10</sup> CDP Plastics Module (2024), is informed by existing plastics research including the Ellen MacArthur Foundation's Global Commitment framework, WWF ReSource Tracker, Pew Foundation, and GRI 306.

<sup>11</sup> CDP Climate Questionnaire Guidance (2024)

- + We view CDP’s Module 10 – which is part of their Climate Questionnaire and in full alignment with TNFD, GRI, World Wildlife Fund (WWF), and the Ellen McArthur Foundation (EMF) – as the best-in-class resource for disclosure and a helpful basis for assessing plastic risk to companies and investors. It standardizes the metrics companies are disclosing publicly, such as the total amount of plastic produced, sold, and/or used, the amount of virgin versus recycled content, and the amount that is reusable or recyclable.

### **3. Set and publish plastic-related reduction and/or elimination targets:**

- + We encourage companies to set plans and targets to reduce plastic use and waste.
- + We view collaboration as a tool for mitigating plastic-related risk as “achieving a circular economy requires coordinated efforts across the entire value chain, from manufacturers and designers to recyclers and consumers, to develop sustainable solutions and effectively manage plastic waste throughout its lifecycle”.<sup>12</sup>
  - + To investors, commitments like Alliance to End Plastic Waste or Plastics Pact or EMF’s Global Commitment on Plastics signal a great degree of preparation and an opportunity for companies to align toward a more circular and sustainable economy.

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<sup>12</sup> World Business Council for Sustainable Development’s insights on “A collaborative step toward ending plastic pollution” (2022)