March 2024

2023 Impact Report

Enabling a Sustainable Planet for Society

TERRA ALPHA
INVESTMENTS

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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

PRI Principles for Responsible Investment
CDP DRIVING SUSTAINABLE ECONOMIES
1% FOR THE PLANET
Intentional Endowments Network
The Net Zero Asset Managers initiative
FAIRR A COLLER INITIATIVE
Climate Action 100+
Ceres Sustainability is the bottom line.
CONFLUENCE PHILANTHROPY
US|SIF The Forum for Sustainable and Responsible Investment

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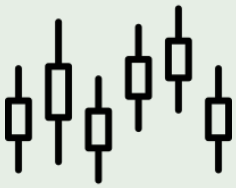
I. By The Numbers – Terra Alpha's Impact

77% science-based targets (SBT) portfolio coverage as of YE 2023



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

SCIENCE BASED TARGETS

24,000+

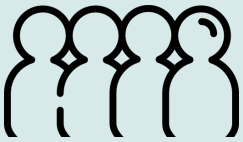
total views on Terra Alpha publications sent throughout the year

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

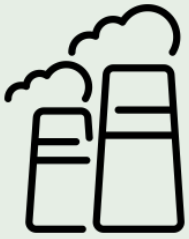


Terra Alpha Team:

50% Identify as women

22% Ethnically diverse

92% less carbon intensive portfolios versus the benchmark



1,004

proxy proposals voted by Terra Alpha Investments

92 Active engagements with our portfolio companies

8,700

cubic meters of water usage avoided compared to the same $1M invested in the benchmark

42% less waste generated compared to the same $1M invested in the benchmark

II. Introduction

While I am very pleased to share with you our 2023 Impact Report, which reviews the meaningful progress our firm made over the last twelve months, it has to be acknowledged that 2023 saw some very concerning developments that slowed critical action on environmental and social fronts. The impacts of cost-driven pressure on consumer and corporate budgets, and from politically driven pushback on environmental regulations/policies and Diversity, Equity, and Inclusion (DE&I) initiatives have been widely reported. Additionally, many financial institutions trimmed back their public commitments to integrating environmental and social assessments into their investment and corporate engagement work. On the positive side, it is our observation that corporate commitments to and work on environmental action continue, though often less publicly.

As a firm, we have expanded our commitments to our impact goals through our portfolios, corporate engagement, and thought leadership. All of our impact and investment work is designed to support our firm's purpose: **to enable a sustainable planet for society in a science-driven, caring, rigorous, and transparent manner.**

Internal actions taken in 2023 that have enhanced Terra Alpha's ability to deliver on our impact priorities include:

- **Team:** we added a fifth full-time research analyst to the team. Each of our analysts are now formally assigned as topic lead for Carbon, Water, FLAG (Forest, Land, and Agriculture), Circularity, and DE&I, (in addition to their sector coverage),
- **Diversity, Equity, and Inclusion:** we continued to hold our firm and companies we are invested in to higher standards on DE&I factors, and
- **Engagement:** we completed the development of our internal corporate engagement tracking tool.

We also delivered on many of our internal impact goals, including:

- Directly engaging with every company in the portfolio on specific and material issues,
- Reaching our near-term 75% science-based targets coverage goal, with year-end 2023 coverage at 77%,
- Increasing the diversity of our team and formally integrating DE&I into all our corporate engagements,
- Continuing to expand our audience reach for our Thought Leadership content, and
- Increasing our policy work.

While we are pleased with our progress, we all need to move faster and begin to see measurable real-world success. In particular, we are looking for significant improvement in corporate water action and disclosure, meaningful growth in our portfolio companies' plans to achieve lower carbon emissions, improved governance, including improved diversity of boards and management teams, and initial adoption of the use of science-based targets for nature by companies.

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

Tim Dunn
Co-Founder and CIO

Note: On March 6, 2024, the US Securities and Exchange Commission (SEC) released final rules on Climate Disclosure for US accelerated filers (companies with revenues greater than $100 million). While we are pleased that the rules acknowledge Climate Change as a material risk and will require, at the very least, disclosure of Scope 1 & 2 greenhouse gas (GHG) emissions, we would have preferred more ambitious rules.

III. Report Overview

Through our fourth Impact Report, we seek to share with our investors and other interested parties **our efforts and outcomes during this past year.**

Enabling a sustainable planet for society is our ultimate goal at Terra Alpha. Our work is 100% focused on leading this shift to a sustainable economy, and we do this through our three core components:

Our Portfolio

- We are invested in companies that are profitably leading the transition toward a truly sustainable economy (forward thinkers, enablers, and pioneers)
- Our portfolio has significantly lower carbon emissions, water usage, and waste streams per $ of revenues versus market indices and the overall economy
- We are committed to moving our portfolio's coverage of companies with science-based targets for carbon to 80% by 2025 (77.6% as of 2/29/2024)

Corporate Engagement

- We broadly advocate for corporations to adopt environmentally smart business practices and disclosure
- We have analyst-driven customized engagement with portfolio holdings based on identified highest opportunities and risks
- Our active ownership ranges from proxy voting aligned with policies to filing shareholder resolutions if necessary

Thought Leadership

- We contribute to peer learning organizations and collaborate with like-minded investors
- We are active participants in webinars, conferences, lectures, and academia
- We compose EP Insights, Terra Alpha white papers, and Terra Alpha Voices
- We engage in public advocacy, including direct communication with federal agencies

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 2023 and early 2024 are that we:

Portfolio:

- Financed 82% less carbon emissions, 88% less water usage, and 35% less waste generation (compared to the global index) via our investment portfolio, and
- Surpassed our 2025 portfolio science-based target (SBT) coverage goal of 75%. Current coverage stands at 77%, 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 92 active engagements with portfolio companies,
- Included our DE&I data disclosure expectations in our initial engagement letter to companies,
- Co-filed one shareholder resolution,
- Launched an engagement campaign regarding data centers' resource use and impact, and
- Collaboratively engaged in policy advocacy alongside peer organizations and companies.

Thought Leadership:

- We added more depth to our Advisory Board with Kathy Baughman McLeod joining us,
- Led a weeklong Wall Street Diversity Accelerator bootcamp, and
- Expanded our reach through podcasts, webinars, a university course, and participation on conference panels.

Looking forward, our 2024 focus builds upon what we share in this report. **Investing and engagement can be an iterative process, and we anticipate impact in the year ahead via:**

- Continuing our drive to bring our portfolio companies to validated science-based targets (SBTs) and action plans to achieve them,
- Holding our companies and firm to high standards of DE&I,
- Using a science-based targets for nature-oriented framework to illuminate water-use management more broadly and deeply across the portfolio,
- Intensifying our waste and biodiversity risk considerations including FLAG, and
- Deepening our assessment of Scope 3 emissions in our investment process.

IV. Firm Initiative Updates

I. Net Zero

Terra Alpha joined the Net Zero Asset Managers initiative in 2021, formalizing our commitment to address climate change using the tools available to us as investors. Specifically:

- By considering climate-related risks and opportunities in our **investment decisions**,
- By **engaging** directly with portfolio companies on our climate-related expectations, and
- By endeavoring to act as a **thought leader** on climate in the investment community, including transparent and public disclosure of our **portfolio carbon footprint and intensity.**

This section provides a progress report on the above tools in our toolbox. **We are particularly proud of achieving our 75% science-based targets coverage goal two years early, enabling us to set an even more ambitious goal of 80% by year-end 2024.** On the other hand, our portfolio companies (and society more broadly) remain behind on achieving the result that matters most: reducing absolute greenhouse gas (GHG) emissions. We begin 2024 with momentum from our successes, coupled with motivation from all the remaining work ahead.

Investment Decisions – Climate at our Core

Climate change considerations have been core to Terra Alpha's investment research since inception, under the premise that carbon efficiency will be a competitive advantage for companies over the long run. Our Environmental Productivity (EP) framework is one core component of our investment process that considers, amongst other factors, a company's climate impacts, risks, and management strategy, as well as whether the company is helping to scale climate change solutions (such as electric vehicles, wind turbines, alternative proteins, or deforestation-free supply chains).

To read more about how climate change considerations flow through our investment process, please see our Investor Climate Action Plan.

Portfolio Company Engagement Priorities for Net Zero

We believe that net zero investing means investing in portfolio companies that are themselves demonstrating progress toward the goals of the Paris Agreement. Our engagement priorities for all companies in our portfolio are for them to:

- Measure their full value chain emissions, including Scope 3,
- Set science-based emissions reduction targets[1],
- Develop and disclose robust plans to achieve their targets (including resource allocation), and
- Demonstrate absolute emissions reductions over time.

In 2023, we saw further progress amongst our portfolio companies in terms of emissions disclosure, science-based target setting, and disclosure of plans/strategies to achieve targets. Our portfolio (and society broadly), however, are not yet delivering the Paris Agreement's required absolute emissions reductions.

[1] 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 SBTi.

Greenhouse Gas Emissions Measurement: Scopes 1, 2, and 3 Emissions

Under the maxim that "you can't manage what you don't measure," Terra Alpha has long engaged with portfolio companies to encourage greenhouse gas emissions measurement and disclosure.

Based on our manually compiled database of what we believe to be the best-available data for our portfolio companies' Scopes 1, 2, and 3 emissions[2]:

- 100% of companies in our diversified strategy have measured and disclosed their Scopes 1 and 2 (location- and/or market-based) emissions for the data year 2022 **(Figure 1)**,
- 89% have sought third-party assurance on their Scopes 1 and 2 (location and/or market-based) emissions (**Figure 2**),
- 80% have disclosed a reasonably complete Scope 3 inventory (**Figure 1**), and
- 35% have sought third-party assurance on their Scope 3 emissions (**Figure 2**).

(Please note that the most recent data available for our 2023 portfolio constituents is still data year 2022).

For Scope 3 our database shows an improvement in portfolio companies' emissions disclosure (now 80%, up from 77% when we reported last year) as well as third-party assurance on Scope 3 data (now 35%, up from 26% when we reported last year). Further, we have multiple companies that are moving in the right direction though not yet receiving full credit. **Nevertheless, we continue to urge caution before drawing conclusions from Scope 3 data, as both the availability and quality of this information lag meaningfully behind that of Scopes 1 and 2.**

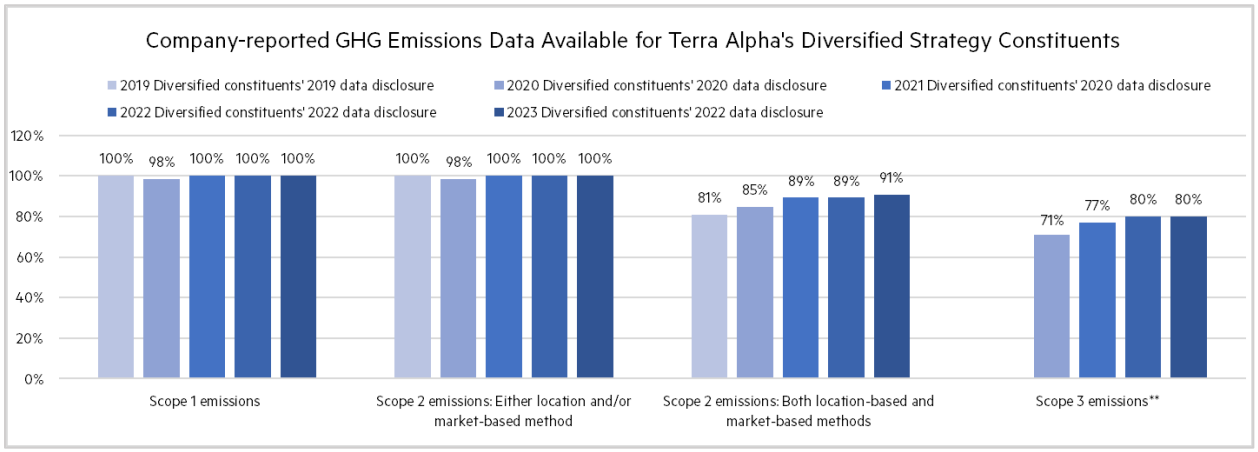


Figure 1. *Scope 1, 2, and 3 emissions disclosure trends.*
**The most recent data available as of this writing for our 2023 portfolio constituents is still data year 2022. Note that our portfolio disclosure key performance indicators (KPIs) in last year's impact report may not match their corresponding data points in Figure 1 due to companies restating or newly disclosing data for 2019, 2020, and/or 2021.*
***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. Please see Appendix 1 for further information about the subjective data quality judgments applied.*

[2] 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.

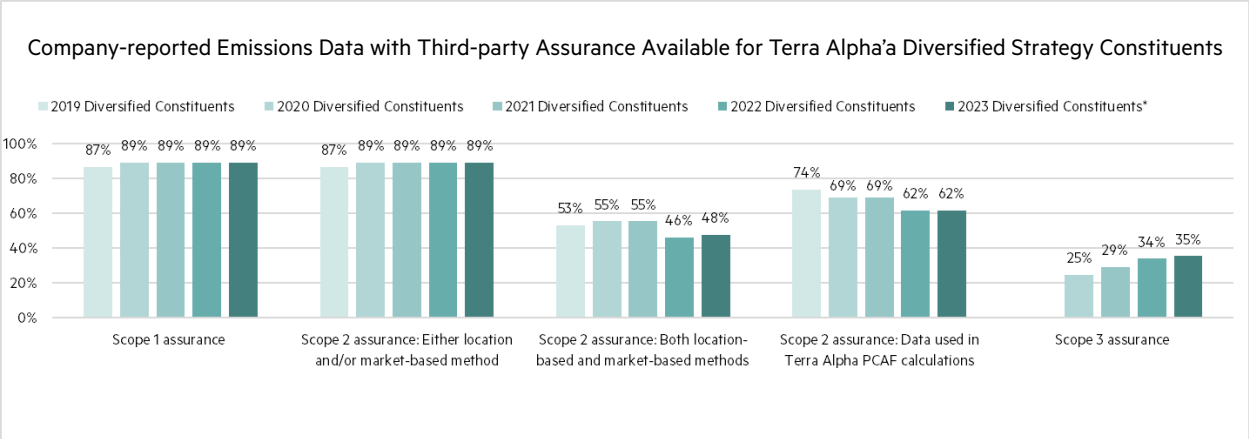


Figure 2. *Verification of company-reported emissions data.*
**Please note that the most recent data available for our 2023 portfolio constituents is still data year 2022. Note that our portfolio emissions assurance KPIs in last year's impact report may not match their corresponding data points in Figure 2 due to companies restating or newly assuring historical data for 2019, 2020 and/or 2021.*

Science-Based Target Setting

We believe that target-setting is an important catalyst for action. This is why we actively engage with our portfolio companies to encourage them to set science-based targets, and why we have set ambitious science-based targets coverage goals for our portfolio.

In 2023, three more of our portfolio companies received SBTi validation of their GHG reduction targets (Figure 3). By the end of 2023, 77% of our AUM, excluding cash, was covered by validated science-based targets, up from 69% at the beginning of the year **(Figure 4)**. Since we exceeded our previous goal of achieving 75% coverage by 2025, we have set a new target to achieve 80% coverage by the end of 2024.

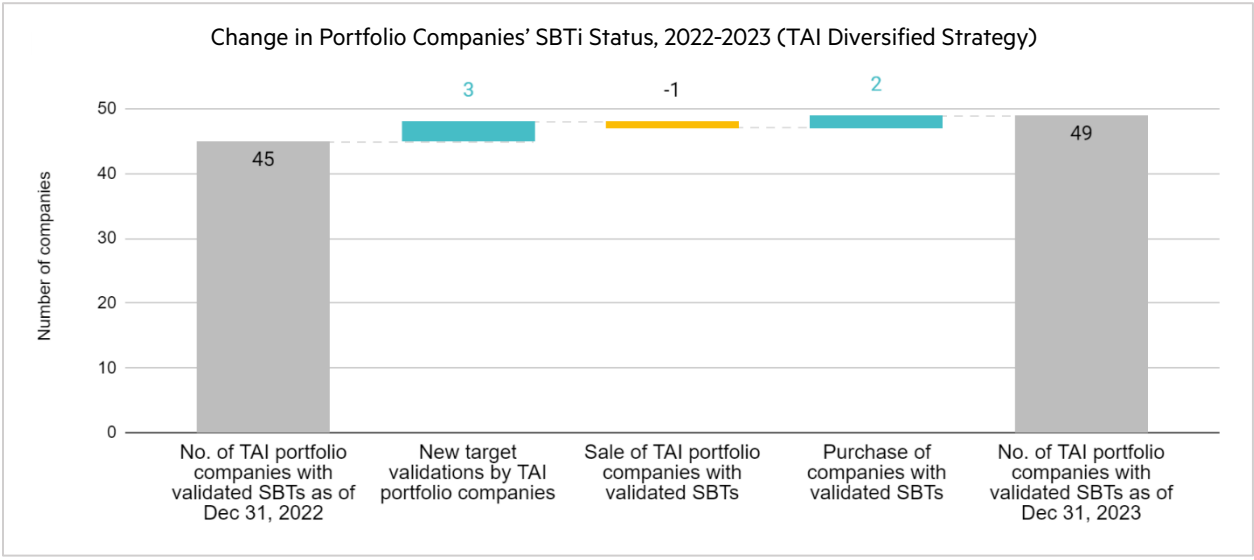


Figure 3. *Portfolio coverage evolution in 2023.*

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.

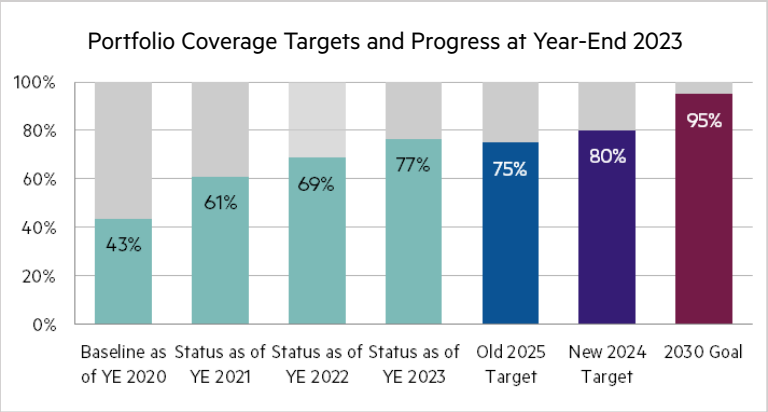


Figure 4. *Terra Alpha's science-based portfolio coverage targets and progress.*

Plans to Achieve Targets

In parallel to setting emissions reduction targets, we expect companies to develop and disclose their operational plans, including resource allocation and capital expenditures, for achieving said targets. Further, we expect them to transparently disclose their progress, and roadblocks encountered, at least annually.

In 2023, Terra Alpha analysts re-assessed each of our portfolio companies' plans and strategies to achieve their emissions reduction targets, as part of the Environmental Productivity component of our investment analysis (**Figure 5**). According to our analysts' assessments, 5% of companies in Terra Alpha's portfolio have disclosed what we believe to be a robust plan (up from 0% last year). Meanwhile, 55% have disclosed a high-level roadmap for achieving their climate targets (compared to 57% last year). This topic remains a key engagement priority in 2024.

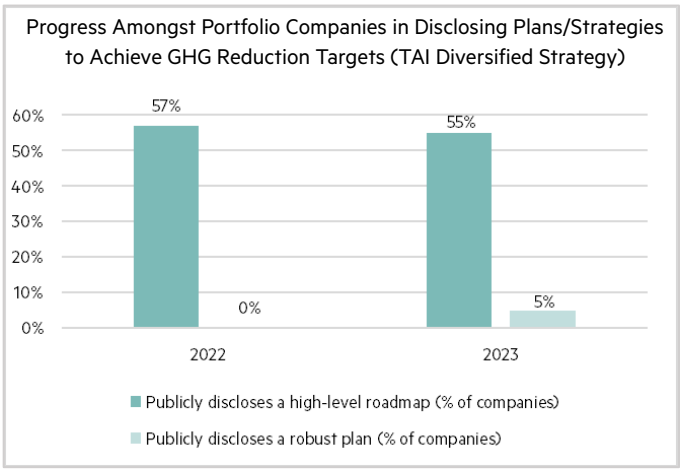


Figure 5. *Terra Alpha's re-assessment of portfolio company plans/strategies to achieve GHG reduction targets*

Tracking Absolute Emissions

The **end goal** of encouraging companies to set science-based targets and develop robust plans to achieve them, of course, is **to achieve absolute emissions reductions over time.**

Using the emissions database we have compiled for our portfolio companies, we see that:

- Of Terra Alpha's portfolio companies at year-end 2023, 48% reported a decline in their absolute emissions (Scopes 1 and 2[3]) from 2021 to 2022.
- If we introduce a "significance" threshold to only give credit for a reduction of 5% or greater, however, only 29% of companies reported a "significant" decline from 2021 to 2022.

(Please note that the most recent data available for our 2023 portfolio constituents is still data year 2022).

[3] We use location-based Scope 2 emissions data, if available; otherwise, market-based.

This underscores that target-setting is easy, while real world emissions reductions are difficult. Of course, real world emissions reductions are the only metric that the atmosphere responds to, so both our portfolio and society, broadly, need to rapidly accelerate progress.

Financed Emissions Measurement

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."

Terra Alpha reports our financed emissions in line with the emerging best practice standard developed by PCAF (**Table 1**).

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. The largest driver of the increase in our diversified strategy financed emissions between 2022 and 2023, for example, was the growth of our assets under management. When we look at Terra Alpha's financed emissions normalized to AUM (**Table 2** – Economic Emissions Intensity), we see an improving trend over time.

Financed Emissions - PCAF Methodology	2019	2020	2021	2022	*2023**
Diversified Strategy					
Financed Emissions (Scope 1)	479	488	508	534	687
Data Quality Score (Scope 1)	*1.13*	*1.12*	*1.10*	*1.09*	*1.09*
Financed Emissions (Scope 2)	384	366	337	374	591
Data Quality Score (Scope 2)	*1.26*	*1.34*	*1.29*	*1.37*	*1.37*
Financed Emissions (Scope 3)	N/A	16,362	30,911	36,599	53,160
Data Quality Score (Scope 3)	N/A	*2.29*	*2.09*	*1.95*	*1.94*
Financed Emissions (Scopes 1 & 2)	**863**	**854**	**845**	**908**	**1,277**
Financed Emissions (Scopes 1, 2, & 3)	**N/A**	**17,216**	**31,756**	**37,506**	**54,438**
Concentrated Strategy					
Financed Emissions (Scope 1)	N/A	256	509	460	449
Data Quality Score (Scope 1)	N/A	*1.07*	*1.05*	*1.05*	*1.03*
Financed Emissions (Scope 2)	N/A	119	183	181	186
Data Quality Score (Scope 2)	N/A	*1.29*	*1.26*	*1.05*	*1.03*
Financed Emissions (Scope 3)	N/A	4,250	9,837	14,032	9,459
Data Quality Score (Scope 3)	N/A	*2.21*	*1.87*	*1.27*	*1.23*
Financed Emissions (Scopes 1 & 2)	**N/A**	**376**	**692**	**641**	**634**
Financed Emissions (Scopes 1, 2, & 3)	**N/A**	**4,626**	**10,528**	**14,673**	**10,093**
Total (Diversified Strategy + Concentrated Strategy)					
Financed Emissions (Scope 1)	N/A	744	1,017	994	1,135
Financed Emissions (Scope 2)	N/A	485	520	555	776
Financed Emissions (Scope 3)	N/A	20,612	40,748	50,630	62,619
Financed Emissions (Scopes 1 & 2)	**N/A**	**1,230**	**1,537**	**1,549**	**1,911**
Financed Emissions (Scopes 1, 2, & 3)	**N/A**	**21,842**	**42,284**	**52,179**	**64,531**

***Table 1**. Terra Alpha's Financed Emissions, 2019-2023.*
**2023 is calculated using year-end 2023 portfolio constituents and their 2022 emissions data (which is the most recent data available as of this writing).*

Additional Portfolio Metrics	2019	2020	2021	2022	*2023**
Diversified Strategy					
Weighted Average Carbon Intensity (scopes 1 & 2)	46.0	47.1	39.4	36.2	33.8
Average Carbon Intensity of Holdings (scopes 1 & 2)	46.5	46.3	40.1	36.0	34.8
Economic Emissions Intensity (scopes 1 & 2)	16.1	12.1	10.0	12.2	11.1
Concentrated Strategy					
Weighted Average Carbon Intensity (scopes 1 & 2)	N/A	70.5	65.7	56.8	56.8
Average Carbon Intensity of Holdings (scopes 1 & 2)	N/A	69.6	61.4	51.9	50.1
Economic Emissions Intensity (scopes 1 & 2)	N/A	16.0	14.9	13.2	11.5
Total (Diversified Strategy + Concentrated Strategy)					
Weighted Average Carbon Intensity (scopes 1 & 2)	N/A	53.1	48.9	44.5	41.3
Economic Emissions Intensity (scopes 1 & 2)	N/A	13.1	11.7	12.6	11.2

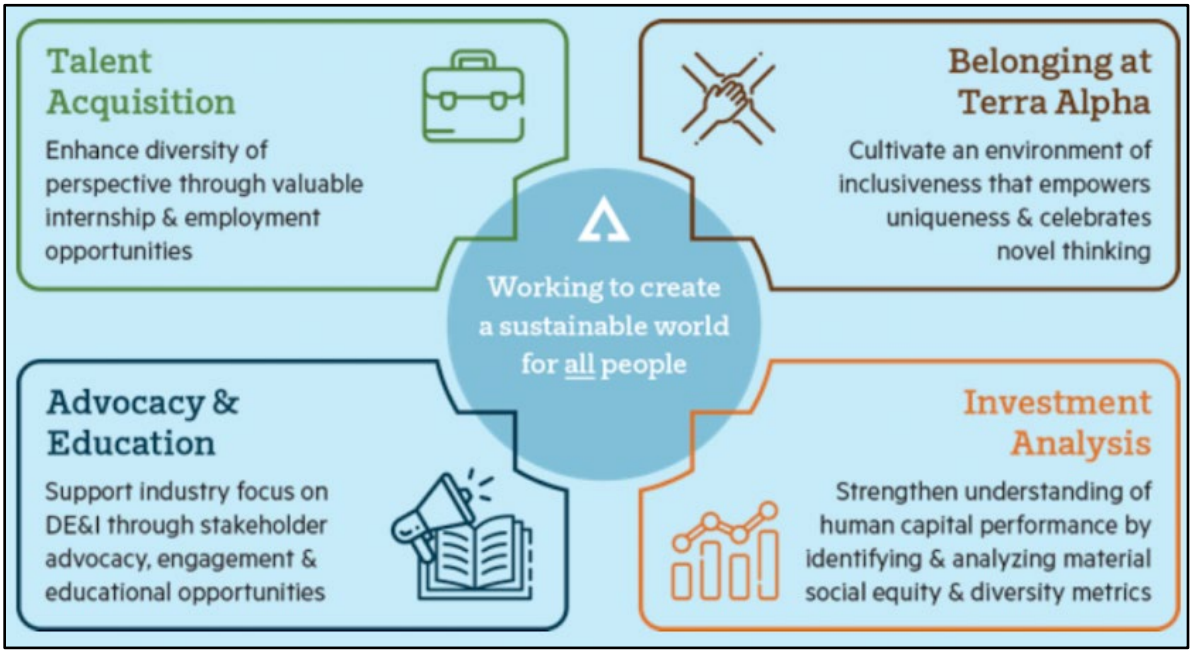
***Table 2**. Portfolio carbon intensity metrics, 2019-2023.*
**2023 is calculated using year-end 2023 portfolio constituents and their 2022 emissions data (which is the most recent data available as of this writing).*

II. Diversity, Equity, and Inclusion

In 2023, our DE&I work continued to revolve around our four pillars: Talent Acquisition, Belonging at Terra Alpha, Advocacy & Education, and Investment Analysis. We notably:

- **Included DE&I data disclosure expectations in our initial engagement letter to companies,**
- Led a week-long Wall Street Diversity Accelerator bootcamp that educated students on equity research,
- Hired two summer interns who contributed excellent research and insights while gaining valuable industry experience, and
- Made our second consecutive CFA DE&I disclosure as signatories of the CFA DE&I Code.

An update on the Four Pillars



Talent Acquisition

DE&I considerations and best practices are formally built into our hiring process and internship program. Focusing on DE&I 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.

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 demographic surveys, annual belonging surveys, a teamwide intercultural development inventory assessment, and a teamwide DiSC assessment. 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 DE&I and educate others on its importance. In our proxy guidelines and voting, we have taken a clear stance on supporting DE&I in our corporate action. We worked with organizations like As You Sow to push for DE&I-related actions and disclosures. We also continued our disclosure to the CFA Institute as signatories of the CFA's DE&I Code.

Terra Alpha's internship program continues to hire bright and ambitious students and give them 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 second year of partnering with the Wall Street Diversity 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 DE&I across the investment industry and beyond.

Investment Analysis

DE&I analysis is an important piece of the puzzle in our Enduring Business Model (EBM) framework. 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 DE&I are often indicators of strength and can give a sense of a company's ability to execute on its business model.

III. Water

In 2023, prior to the release of any global technical guidance to set science-based targets for freshwater, **we refined our analysis and thinking around business use and impact on freshwater resources**. This more rigorous water assessment methodology has been led by our analyst Marissa Oliveri who took on the focus of water this year. Our earliest Terra Alpha water risk research was focused on analyzing bottom-line impacts to companies; we continued evolving our understanding of water risk to understand an industry or company's impact on environmental and human health through their dependency on water resources. We are doing **work to consider and implement the Science Based Target Network (SBTN) guidance as an umbrella framework for identifying and engaging companies on issues that affect nature loss and biodiversity changes to our planet.** *Our work into understanding the SBTi's FLAG Guidance on land-based emissions reductions and removal from agriculture, forestry, and other land use can be thought of as a bridge, so to speak, between the leading SBTi perspective on emissions and the crucial biodiversity tent that the SBTN creates.*[4] Together, SBTi (plus our Net Zero Asset Managers initiative (NZAM) commitment) and the SBTN provide us with **measurable and time-bound goals that are rooted in science**, and will be helpful in articulating ideal targets and change in our portfolio companies for sustainable success, and more broadly in the capital markets and society.

Water Impact Assessment

Climate change disrupts global water cycles, influencing precipitation and weather patterns and disruptions that are already impacting business in their value chain. While analyzing broader, global threats to freshwater systems, since these can be significant for company and community operations, Terra Alpha has deepened our understanding of **water stewardship**, **water positivity**, and **water neutrality**. Each of these concepts ties together contextual knowledge of businesses' use and impact on water resources with initiatives.

- **Water stewardship is the sustainable use of water,** often achieved through stakeholder engagement**, that aligns actions at the site with conditions in the watershed.** Companies are realizing that to assess water-related risks and opportunities, context-based solutions are required: solutions that holistically take into account surrounding areas, drivers, and pressures on/of nature *(or, since water in a given ecosystem or watershed is shared by all its users, no single entity can ensure sustainable management of the resource on their own; only collaboration can secure water for the future).* Water stewardship can be taken further to corporate water stewardship. That is, taking an expansive view of water stewardship across the enterprise. Corporate water stewardship takes into consideration how water is used within direct operations, and how water use impacts operations. It also means engaging stakeholders as a tool to better inform corporate water stewardship strategies both upstream and downstream.
- Within the corporate water stewardship landscape, some companies are setting and pursuing "water balance" goals as part of their overall water strategies. Water positive goals are generally the idea of "adding" back more water than a company consumes. Generally, the idea is that the volume of water consumed by a company is "balanced" by water that is "added" back. Balance goals are typically established as one component of an overall water stewardship strategy.

[4] From the SBTi Forest, Land and Agriculture FAQs: *The Science-Based Targets initiative requires companies that meet either of the following two criteria to set a FLAG science-based target: i) Companies with land intensive activities in their value chain from the following FLAG-designated sectors are required to set FLAG targets: ● Forest and Paper Products – Forestry, Timber, Pulp and Paper ● Food Production – Agricultural Production ● Food Production – Animal Source ● Food and Beverage Processing ● Food and Staples Retailing ● Tobacco ii) Companies in any other SBTi-designated sector that have FLAG-related emissions that total more than 20% of overall emissions across Scopes 1, 2 and 3.*

Table 3 walks through the five critical threats to groundwater – eutrophication, groundwater depletion, division and transfer of water, metals contamination, and plastic pollution – and explains the geographic distribution, environmental impacts, and human health impacts of these threats. Global-level water thinking, such as this, is tied to SBTN's view of "**context-based targets**" and "**context-based solutions**." Context-based in this context means that surrounding local and global drivers and pressures of nature degradation are accounted for and analyzed.

Critical Threat	Defined Threat	Relevant GICS Industries	Geographic Distribution	Environmental Impacts	Human Health Impacts
Eutrophication	Excessive enrichment of water by nutrients, usually nitrogen and phosphorus, contributing to algal growth	Food products, Beverage, Household products, and Textile & Apparel	Most impact in SE USA, Western Europe, East and Central Asia	Oxygen depletion, ocean acidification, blocked sunlight, fish die-off events, deterioration of water quality	Tainted water supply, "blue-baby" syndrome, rashes, stomach, liver illness, respiratory issues, neurological effects
Groundwater Depletion	Occurs when extractions exceed natural groundwater recharge	Food products, Oil and gas, Metals and mining, and Textile & Apparel	Hot spots include western USA, India, Saudi Arabia, China, Mexico, Northern Africa, Pakistan, and China	Permanent loss of aquifer storage capacity, groundwater salinization, sea-level rise, decreased streamflow and wetland loss	Stress on drinking water resources, more contaminated drinking water consumption
Diversion and Transfer of Water	Movement away from natural channels, transferring water from one basin to another	Food products, Metals and mining, Renewable power (hydroelectric power), and Textile & Apparel	India, China, Middle East, Peru, Bolivia, USA	Increased evaporative loss, salinization, nutrient enrichment, spread of pollutants, reduced	Increase spread of pollutants and disease
Metals Contamination	Metallic elements that can be toxic in relatively low concentrations	Metals and mining, Semiconductor and circuit board, Battery, High-tech and electronics	Higher concentrations found in Africa, Asia, and South America	Toxic to organisms and can bioaccumulate	Toxicity includes organ failure, impaired development, genetic disorders, cancer, and neurogenic properties
Plastic Pollution	A major pollutant that impacts aquatic species through entanglement and ingestion of plastics	Personal products, food products, Beverage, Textiles, Automobiles, Chemicals	China, India, Bangladesh	Bioaccumulate in organisms , large pieces of plastic may entangle or kill animals	Microplastics accumulate in the food chain, absorb chemicals, and are a vector for biofilms

***Table 3**. Data sourced from Ceres Global Assessment of Private Sector Impacts on Water*

Our evolving more rigorous methodology to assess water, for example, is already aligned with the five steps the SBTN outlines:

- Step 1: Assess
- Step 2: Interpret & Prioritize
- Step 3: Measure, Set, & Disclose Targets
- Step 4: Act
- Step 5: Track

Step 1: Assess

At Terra Alpha, we follow a similar "Step 1: Assess" when analyzing our portfolio's impact and dependencies on freshwater and where we can drive the most change through active management and engagement. **Our "Step 1" occurs when we first begin analyzing a company in the form of our Environmental Productivity (EP) analysis.** When analyzing a company's water-specific risks and opportunities we both perform a materiality screening and pressure assessment. We analyze material pressures for the company through a global, industry-specific, and location-specific framework to better understand where and what a company should have water-specific targets on. Global frameworks take into account things such as the top five critical threats to groundwater. Industry-specific frameworks analyze at an industry level what the most material impacts of companies in the space are. Location-specific frameworks consider the health of a basin at which a company operates.

We also perform a quantitative assessment to understand where a company is on their water stewardship journey and how a company understands its own pressures and drivers of natural change. Part of this quantitative assessment is understanding the company's water risk/dependence abatement potential, which is the ability of the company to mitigate its risk/dependencies related to water. This assessment helps us understand the likelihood of continued water resource impact.

Following our "materiality screen," Terra Alpha conducts a pressure assessment for companies through our EP Rating analysis. Our "pressure assessment" includes both qualitative and quantitative aspects. On the quantitative side, we analyze how a company's water intensity (water consumption / revenue) compares to companies globally. From here, we are able to understand a company's pressure on nature through the magnitude of its water intensity relative to its most direct peers. On the qualitative side, we also analyze a company's:

- Intentionality,
- Enabling qualities,
- Progress & performance, and
- Risk & opportunities.

From both the qualitative and quantitative environmental pressure assessment, we are able to understand a company's progress, performance, risks, and impact relative to the company's most direct peers and the most relevant state of nature, and we are able to use this information to inform our engagement strategy.

Step 2: Interpret & Prioritize

In Step 2, companies use information from Step 1 on all pressures identified as material *and the biodiversity data collected* to determine locations and activity "boundaries" for each target, and where a company can act first to mitigate negative impacts.

Terra Alpha has undergone a similar interpretations and prioritization process for our portfolio to inform our engagement strategy. Recognizing that all companies are on different water-related journeys, Terra Alpha interprets and ranks quantitative and qualitative data for all portfolio companies to determine which companies are in need of the biggest engagement "push." We also continue to engage with laggards, leaders, and those in between.

For our own engagement strategy, we have created **a dashboard that tracks water-related data** for all portfolio companies. The data is a mix of qualitative and quantitative information, such as water intensity and abatement potential. We are also able to utilize the perspectives of analysts covering the companies to inform an engagement temperature. For instance, **a company that does not recognize its impact and dependency on water resources would have a higher "engagement temperature" than a company that recognizes this and has already set targets with reduction plans**. Terra Alpha has been able to utilize this data to rank the engagement temperature of our companies. We have also been able to **prioritize topics** to ensure that we are driving the greatest net positive change per engagement. For instance, Terra Alpha would not engage with a company for water quality impact if the company does not materially impact the quality of water resources. Perhaps we would focus on stakeholder engagement, water target setting, or other concepts to push for change that is more actionable and generates a great return on investment (ROI) for the company. Along these lines, **Terra Alpha is able to push for actionable and feasible change for specific companies while driving overall change in the whole portfolio**. **Figures 6-9** below share our EP water assessment.

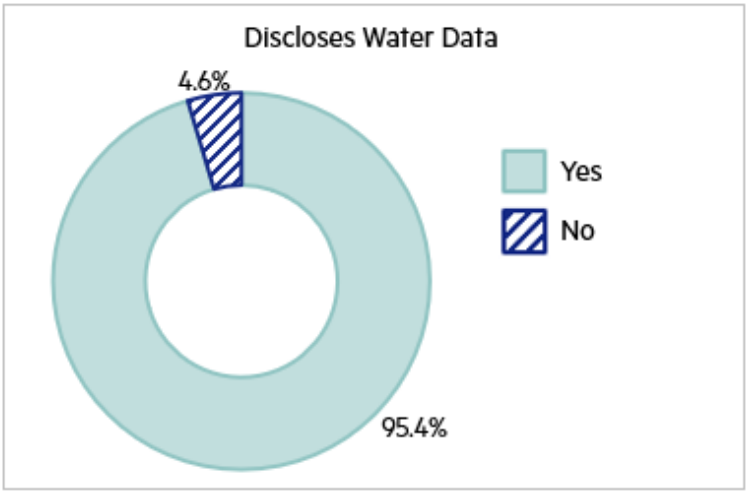


Figure 6. Terra Alpha portfolio companies that disclose water data

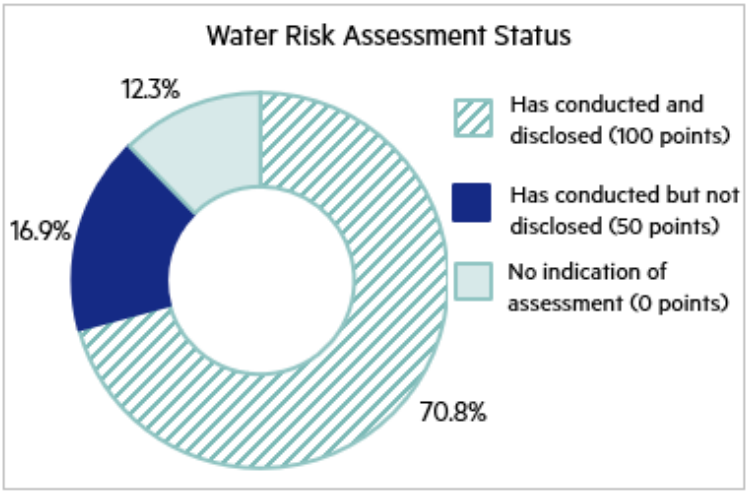


Figure 7. Terra Alpha portfolio companies' water-risk assessment status

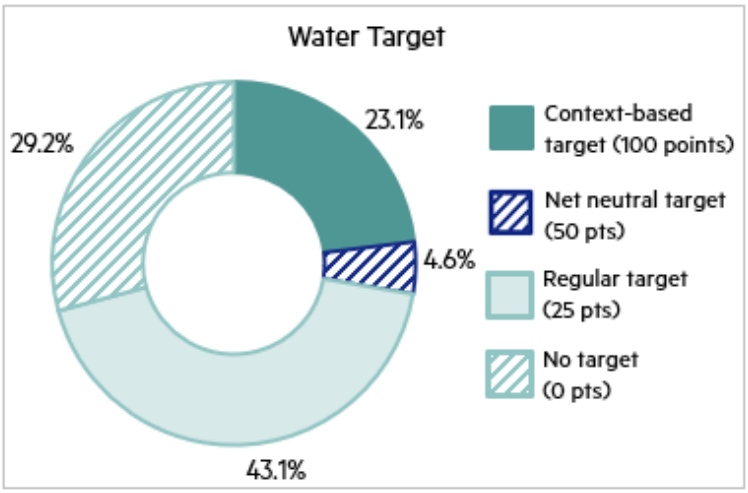


Figure 8. Terra Alpha portfolio companies with water targets

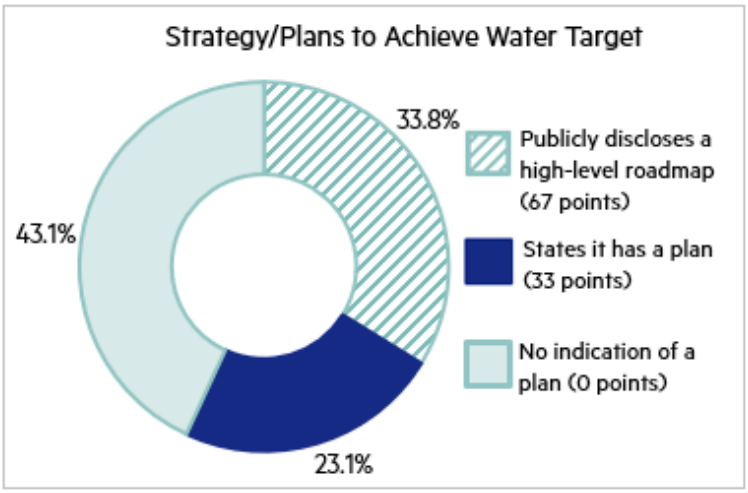


Figure 9. Terra Alpha portfolio companies' strategies/plans to achieve their water targets

Step 3: Measure, Set, & Disclose Targets

The setting of SBTs for nature is based on a framework of DPSIR (Drivers, Pressures, States, Impacts, Responses) framework. While this is the language the SBTN has come up with, it resonates with our own EP water evaluation and water engagement framework.

Per the Science Based Targets Network's Step 3: Measure, Set, & Disclose Technical Guidance for Freshwater, **Figure 10** shows a high-level overview of the five steps in the target setting process as applied to freshwater. It shows the relationships between different pressure and state of nature variables and how companies use them in the methods.

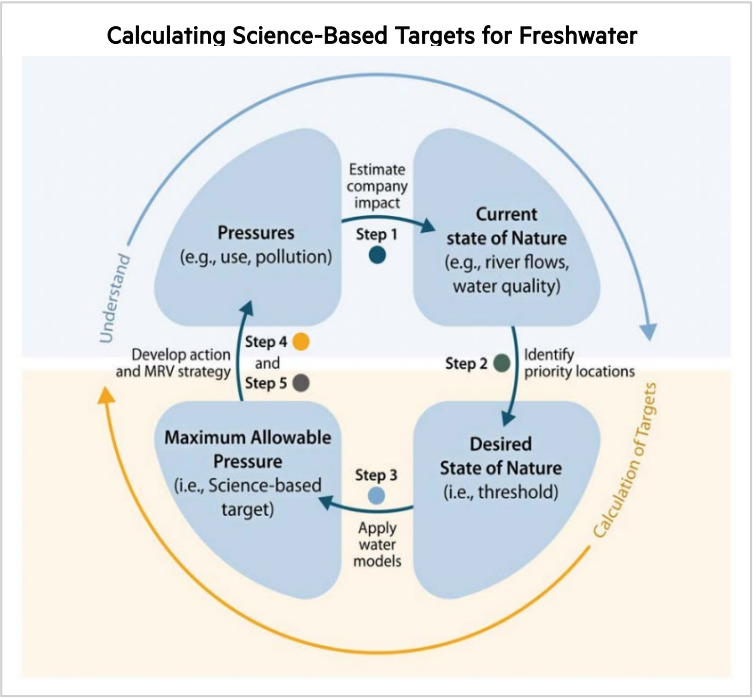


Figure 10. *Source: Science Based Targets Network Step 3 Technical Guidance*

Step 4: Act

Although the SBTN has yet to release guidance for "Step 4: Act," at Terra Alpha **we are fully entrenched in action.** For Terra Alpha, oftentimes the most useful vehicle to drive change is to engage with companies. Whether it be directly through engagement with the company or via proxy voting, we actively push for our companies to improve their sustainability strategies through active portfolio management. Recognizing that there is a great amount of change to be undergone, Terra Alpha has focused the year on refining our water engagement strategy: **engaging in the most efficient and impactful way to drive the most net change per engagement.** Our engagement approach mimics the actions/processes companies undergo working with SBTN: **aligning targets and actions for where there will be the greatest net positive impact.** For that reason, we have utilized "**engagement temperature**" as a way to drive our engagement strategy. Engagement is led by both the analyst and our Director of Corporate Engagement. Analysts throughout the year will engage with companies on a variety of points. The engagement temperature helps analysts assess the relative materiality and ROI of engaging with a company on water, and on which particular aspect of water to engage about.

Step 5: Track

Through our analysis to understand where the portfolio and each company lies on its water stewardship journey, we created a dashboard that tracks all relevant portfolio- and company-specific water data. Through this dashboard, we are able to track over time the improvements for each individual company and how these improvements impact the standing of the portfolio. Terra Alpha is committed to continually assessing, acting, and tracking where our portfolio is in the measurement, setting, disclosure, and achievement of water-related targets and goals, and to continually trying to improve where each company, and the entire portfolio, stands in its journey.

IV. Waste and Circularity

More than the majority of our portfolio companies (86%) disclose their waste management in some fashion. On our agenda in 2024 is to **dig deeper on waste** in terms of its impact on nature, and to **redesign our ideal waste disclosure** that is essentially a rubric for our assessments of companies. Identifying the cost for and risks to companies, and the "downstream" planet impacts, are part of this work. Led by Research Analyst Roshni Puli, w**e began this refocused waste research with a deeper dive into plastic-based waste in 2023.** There is a broad range of impacts of plastic on biodiversity; as most are well aware, micro plastic pollution in our water is evident, and landfill waste is high in plastic content. Only 2% of plastic is recycled currently, and 44% ends up in landfills.[5] We are encouraged that as part of their questionnaire for companies, CDP (formerly the Carbon Disclosure Project) has begun to incorporate a set of questions around plastic (**Figure 11**). Where

Figure 11. *Sourced by the CDP Reporter Services Program*

[5] Source: Ellen MacArthur Foundation – Completing the Picture; How the circular economy tackles climate change

pertinent, we are incorporating the CDP data into our own plastic waste assessments going forward.

Figure 12 below is a useful starting point to track plastic risk across any portfolio, including Terra Alpha's.

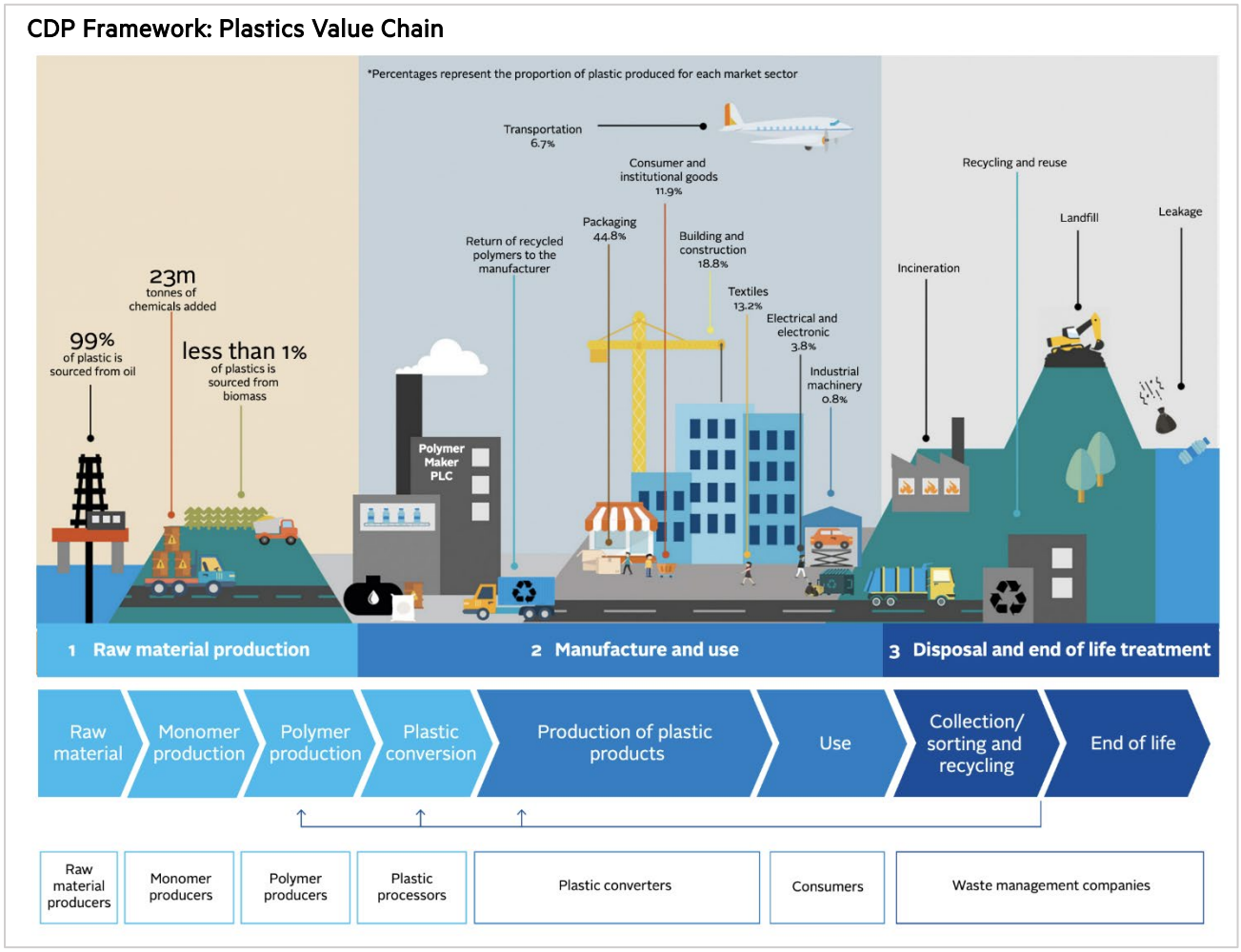


Figure 12. *Overview of the plastic value chain. Source: Anthesis*

V. Portfolio Impact

As of year-end 2023, our strategies were invested in companies with a combined market capitalization of $16.2 trillion and revenue of $3.7 trillion. As such, our portfolio is still 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. The companies in which we invest have impact not only through the products and services that they offer, but also through how they utilize natural resources throughout their value chains. Along these lines, when we are determining whether to invest in a company, we analyze the firm's 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 be more efficient at utilizing natural resources through their goods or services (e.g., Xylem is a leader in developing innovative water solutions with the use of smart technology). We believe that around 85% 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 is demonstrating how offshore salmon farming can be used to produce a more environmentally friendly protein to feed our growing population). We believe that about one quarter of our holdings are showcasing 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 is a consumer goods company that is trying to minimize its operational footprint). We believe nearly 95% of our holdings exude forwarding-thinking tendencies.

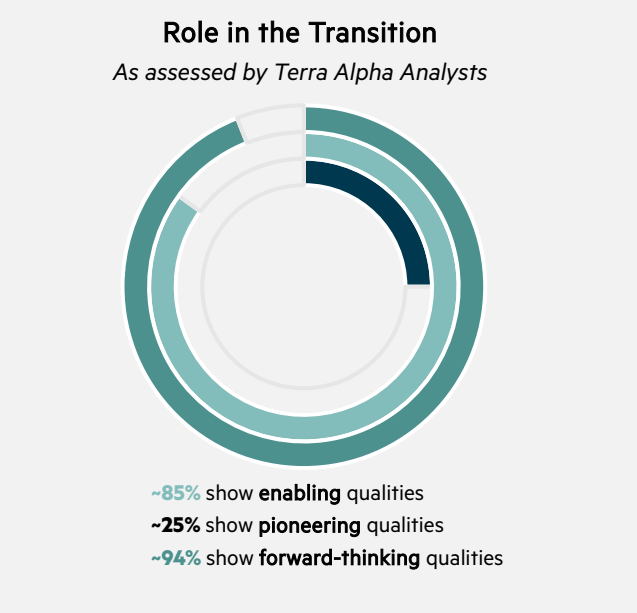


Figure 13. *Source Terra Alpha Investments*

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 of 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 holdings-level information, which includes each company's Environmental Productivity Rating, Enduring Business Model Score, and carbon, water, and waste intensity measures (when available).

Figures 14 & 15 below show snapshots of the relative intensity measures for both our diversified and concentrated strategies as of year-end 2023. These charts are an example of the type of information we regularly provide to our investors.

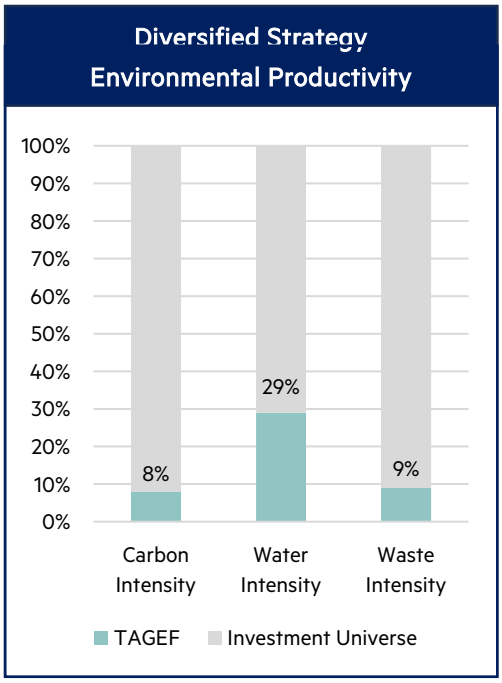


Figure 14. *Terra Alpha diversified strategy intensity measures as of year-end 2023*

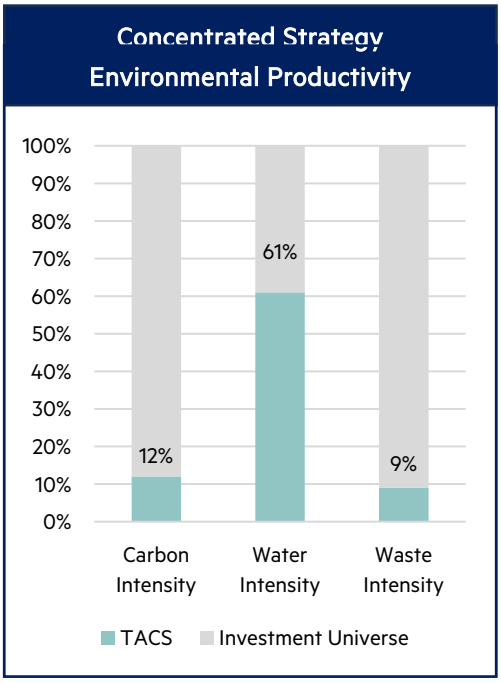


Figure 15. *Terra Alpha concentrated strategy intensity measures as of year-end 2023*

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 2023 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. Historical data has been updated to reflect restated data provided by companies.

Methodology note: The metrics provided within this section reflect an equity-only approach to measurement. That is, the percentage of ownership is determined using market capitalization information rather than enterprise value information. For more information around our financed emissions (aligned with Partnership for Carbon Accounting Financials (PCAF) methodology), please refer to the section Firm Initiative Updates: Net Zero.

Carbon

In 2023, based on a $1 million investment, our diversified strategy financed 82% fewer emissions than the global index; thereby, avoiding 70 tonnes of CO2e (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 828 tonnes of CO2e. *Please note that the 2023 calculation uses 2022 emissions data, as 2023 emissions data is not yet available.*

Figure 16 below shows the cumulative annual GHG emissions (measured by CO2e) avoidance from a $1 million investment in Terra Alpha's diversified strategy vs. the same dollar invested in the iShares MSCI World ETF.

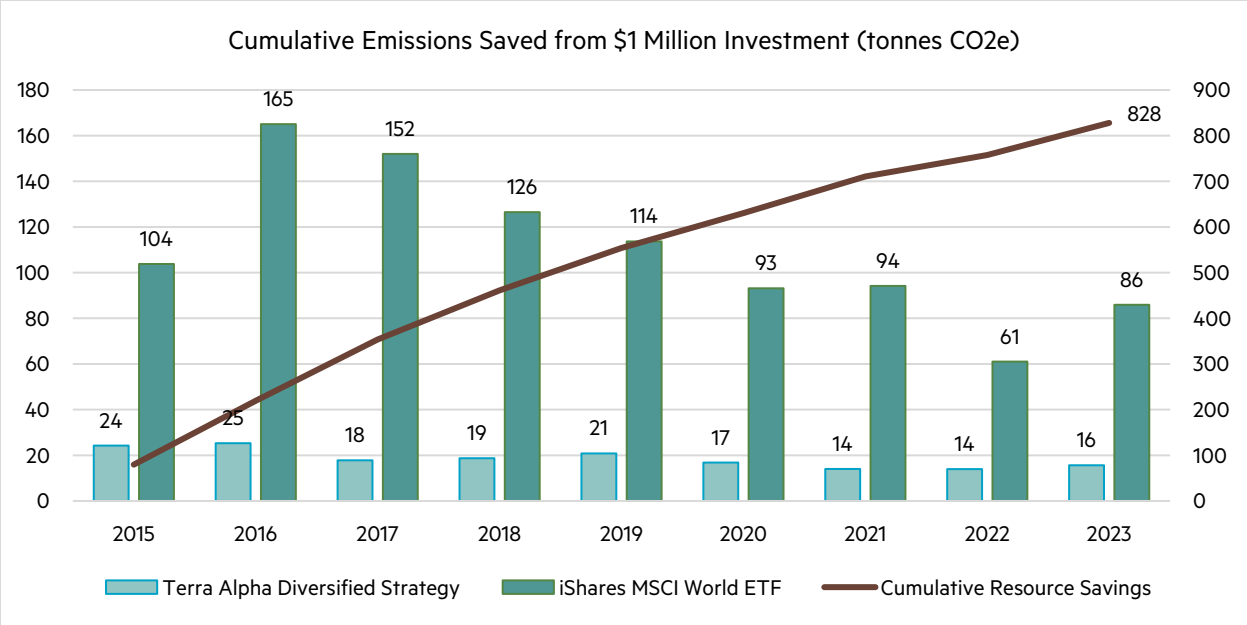


Figure 16. *Source: Terra Alpha Investments*

Water

In 2023, based on a $1 million investment, our diversified strategy financed 88% 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 79% less water withdrawals than the global index; thereby, avoiding over 100,400 cubic meters of water withdrawal. *Please note that the 2023 calculation uses 2022 water data, as 2023 water data is not yet available.*

Figure 17 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.

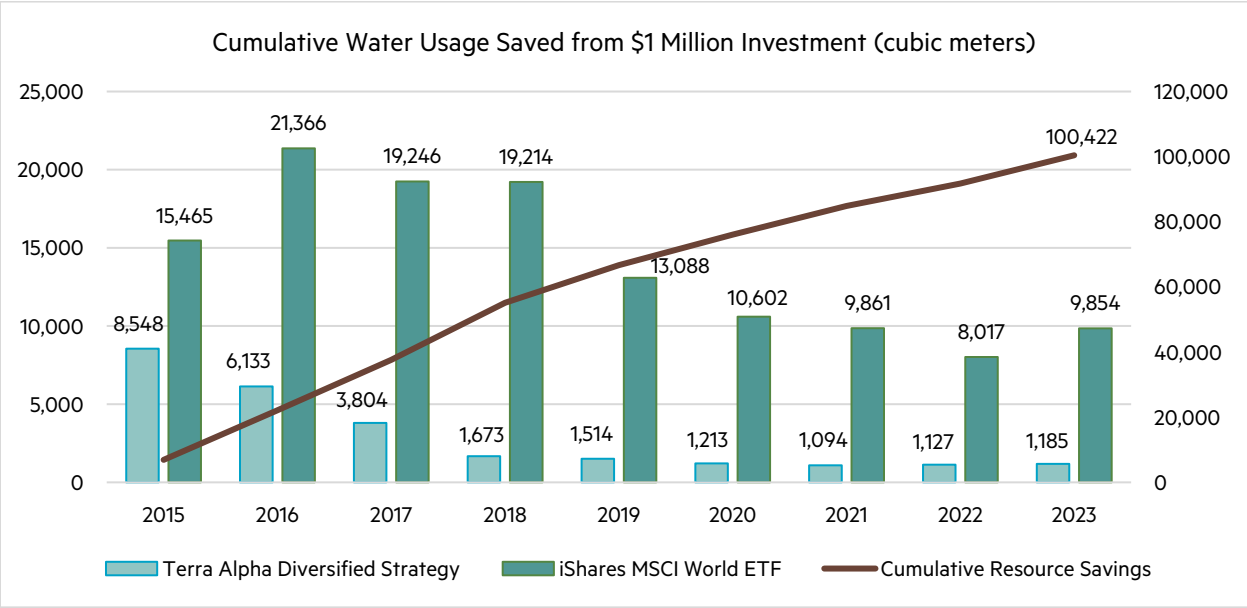


Figure 17. *Source: Terra Alpha Investments*

Waste

In 2023, based on a $1 million investment, our diversified strategy financed 35% less waste generation than the standard global index, avoiding 3.4 metric tons of waste generation. Cumulatively since the strategy's launch in May 2015, based on a $1 million investment, the strategy has financed 42% less waste generation than the global index; thereby, avoiding 34 tonnes of waste. *Please note that the 2023 calculation uses 2022 waste data, as 2023 waste data is not yet available.*

Figure 18 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.

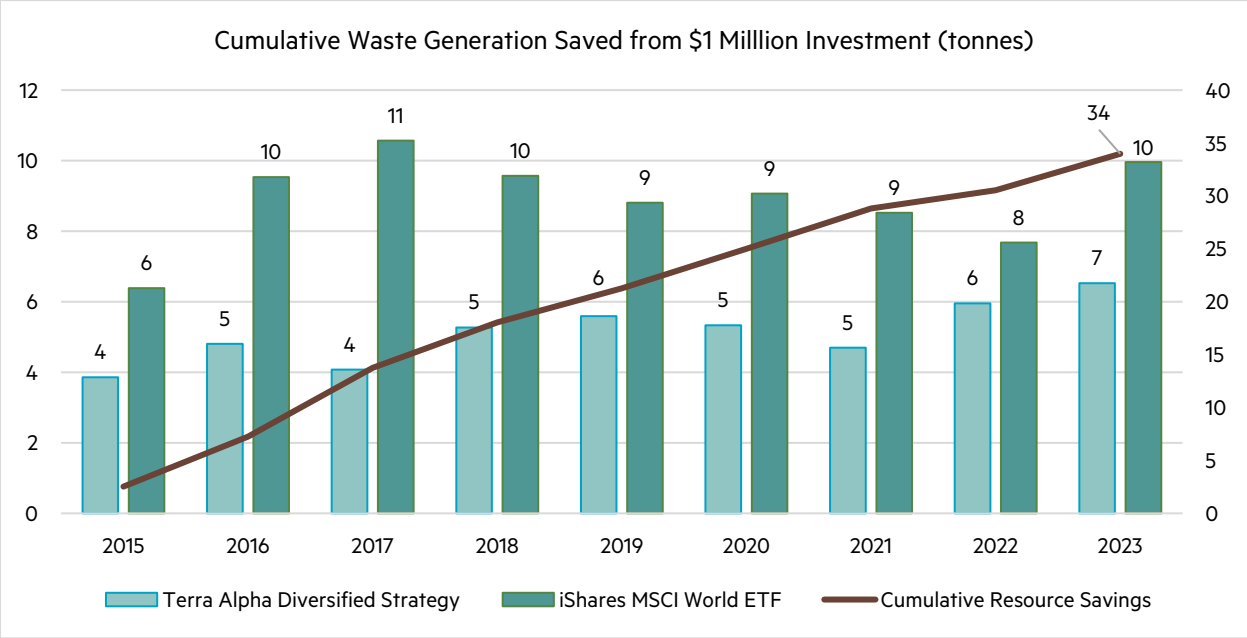


Figure 18. *Source: Terra Alpha Investments*

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 DE&I analysis into our EBM 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 DE&I 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 DE&I.

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

EEO-1 Disclosure (US Companies Only)	62.5%	86.7%	90.3%
Avg. % Ethnic Diversity on Board of Directors (US Companies Only)	23.1%	24.3%	26.3%
Avg. % Ethnic Diversity on Executive Teams (US Companies Only)	19.2%	21.5%	26.7%

Table 4. *Year-end 2021, 2022 & 2023 Sample DE&I Metric Disclosure from TAI Portfolio Companies*

VI. Corporate Engagement Impact

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 DE&I frameworks and governance considerations. Our intention at Terra Alpha from the beginning has been to have **an integrated approach to our investment process and our engagement work**. We have moved forward in our engagement goals in 2023 and are eager for our 2024 plans that are already underway.

In the 2023 Impact Report's coverage period we:

- Continued to **engage on science-based targets for emissions and transition plans** to achieve them,
- Initiated **diving deeper into water, FLAG, and waste/circularity** impacts (which will gain a greater focus in 2024) using science-based targets for nature **via the Science Based Target Network guidance,**
- Began an engagement **campaign on data centers' resource-use impacts**, which will continue as a focus in 2024,
- Continued to keep companies to a **high standard on DE&I factors,** and
- Advocated through **engagement with federal policy lawmakers and regulators** to support sustainability investments and initiatives such as renewable energy power transitions.

Engagement Impact Assessment

There are both obvious lines and subjective determinations in categorizing the effectiveness and impact of engagement, but often the line is difficult to pin down – the question "did we alone as a firm cause a company to change their behavior?" is a constant question. We have been complimented that our engagement work on a topic lent support to internal decision-making, but it would be quite rare to feel solely responsible for driving a significant change. We use some simple **KPIs for assessing engagement impact** – knowing that there remains necessary nuance.

- One clear line is that we do not count a perfunctory answer to clarifying financials questions to be an engagement – let alone one categorized as meaningful.
- Voting shares is a form of engagement, but one we consider a fiduciary obligation and do not count it in our engagement tallies outside of voting.
- We have determined that **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.**
- No response is a data point we are tracking, as well.

Not obvious outwardly, yet a consequential internal impact within Terra Alpha in 2023 was that we implemented a more easily shared tracking process for engagements. This helps us be more cohesive and share specific company engagements throughout our whole investment team more easily, which will help us moving forward to "cross-pollinate" engagement efforts and plans for any escalation across companies.

We identify **priority areas of engagement** specific to each company and record them as part of our engagement tracking; these areas **evolve from our EP and EBM** research and analysis and have operational significance. Socializing these topics amongst our full investment team is part of the intent of our engagement tracking effort. We developed a dashboard for tracking engagement priorities specifically on water. We are **fully ready to launch into our water engagement across the portfolio using company-specific engagement priorities.**

As we tread farther along engagements with companies, our escalation path – laid out in our engagement escalation policy – means transitioning our requests from the investor relations and sustainability executives to Board members or the CEO, or filing shareholder resolutions.

Quantifying our engagement interaction:

- We had 92 engagements[6] with companies over the 2023 Impact Report period.
- 58 were on topics we have identified as **priorities for engagement** specific to that company and were meaningful interactions.
- Many were engagements related to our **continued portfolio-wide SBT campaign**.
- We co-filed one shareholder resolution.

Water is identified as a priority engagement topic for over half our portfolio companies, as is waste, deforestation, or a biodiversity topic in 2024. In our SBT campaign, we are focused on making progress with the **23%** of our companies without set and verified 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. The SBTN guidance on nature (see the Firm Initiative Updates: Water section on SBTN) is an exciting evolution and using this framework, even as it is in its nascent stages, will be useful for identifying and structuring our impact work on biodiversity factors that are operationally significant for our companies and our planet. We have added to our knowledge base by **initiating more research and engagement focus on water, waste, and FLAG in 2023,** as well as continuing with our emissions work.

Lastly, engagement strategy and portfolio decision making are sometimes not discreet binary situations, and as such, as we move into our 2024 engagement agenda, we are starting to address **some challenging questions –** what if not all our portfolio companies are able (or willing) to commit to set science-based targets**? What if even in spite of their best intentions, they cannot meet their set targets?** Where does that leave us and our NZAM commitment to achieve our 95% target by 2030 and our plans to get there? As of this report, we have eight companies in the portfolio that have neither validated SBTs nor commitments to set SBTs. Six of these are reticent to set SBTs, which we have learned through engaging with them. (Example reasons include: (i) they foresee exceptional growth that would challenge their ability to reduce energy/electricity consumption, or (ii) they do not believe they have enough control or influence over Scope 3 emissions to achieve science-based targets.) In our engagement work, there are some stark realities that are exposed. Another situation presents the scenario that if a company is a massive consumer of electricity for its operations and it must rely on massive shifts to renewable power by utility operators in the grid to come close to reach any SBT targets – and such a monumental shift in the power grids may not actually happen – where does that leave us and our NZAM commitment? We have acknowledged that we may not reach 100% SBT in our own Terra Alpha portfolio holdings with our 95% target. Hypothetically, do we eventually decide to sell holdings because they will not be able to commit and help us reach our own NZAM goal? We are beginning to grapple with such possible scenarios in light of the realities of upstream and downstream Scope 3 emissions and supply chain constraints.

[6] *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.*

Specific Engagement Areas and Insights

1. SBT Campaign Update

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 2023, **77%** 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 have surpassed our 2025 commitment of 75% of the portfolio to have SBTs. This has enabled us to set an even more ambitious goal of 80% by year-end 2024, and there is work to be done to reach our 2030 goal of 95%.

2. Direct Engagement Impact: Water & Data Centers Campaign

One of the fastest growing changes in our world is the use of cloud-based computing, and data centers are rapidly multiplying. **Data centers are causing a largely unregulated expansion of stress on natural resources.** Water impacts are inherently impactful on local communities – we see it in northern Virginia near where we are based, for example. Our campaign aims to gain a comprehensive understanding of the plans these companies have to maintain to achieve emissions reduction targets and water reduction plans in light of the data centers' growth and draws. As buildings, they require vast amounts of power and cooling capacity to run, which translates into massive energy consumption, and often significant water draw on the nearby communities' water sources. This creates a sustainability concern for operations and for shareholder value. We are in the midst of pursuing these engagements.

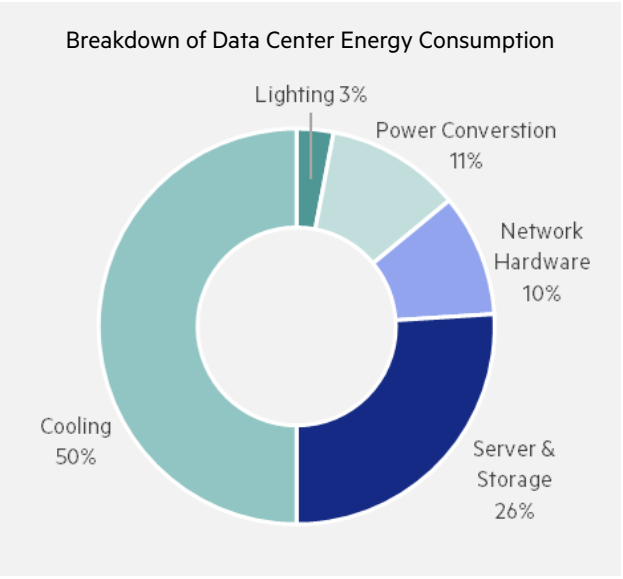


Figure 19. *A breakdown of energy consumption by different components of a data center. Source: IEEE Communications Surveys and Tutorials*

We launched this engagement campaign regarding data centers in late 2023, with a select group of portfolio companies that are at the forefront of data center expansion and their ecological impact. The box below shows a sample of the messaging used.

Our efforts to engage are ongoing in 2024.

Language from Data Centers Engagement Campaign:

Given the recent surge in expansion of data center construction, in support of cloud services and other technology infrastructure, we need to gain a deeper understanding of how [redacted] is managing energy consumption and emissions, water consumption and impact, and renewable energy procurement. Ambitious climate targets have been set to address the above but we are concerned that rapid growth is being prioritized at the expense of progress on those targets. Our questions are:

1. *Is [redacted] still on track to achieve its emissions reduction and renewable energy procurement targets in spite of the data center buildout acceleration?*
2. *Is [redacted] seriously considering water risks in choosing locations for new data centers?*

3. *What is [redacted] doing to ensure that data centers being constructed and operated in locations with insufficient access to renewable energy are not contributing to additional demand for energy derived from fossil fuels?*

   (Note: Creating new fossil fuel projects in one area and then offsetting those emissions in a different power grid is still contributing significantly to fossil fuel demand. We would much prefer to see any additional power needs met with renewable projects in the local grid where the facility provides consumer power).

A Highlight from Data Center Campaign Engagement – Data Center Equipment Efficiency:

As a notable example, in our portfolio we own an industrial company that supplies heating and cooling equipment to data centers. They revealed encouraging perspectives on two fronts in a fruitful engagement conversation about:

1. Their innovative work on their own products' capabilities to optimize natural resource use for customers, through systems that minimize water withdrawals and maximize efficiency levels on the electricity needs, and
2. How their technology company customers – who are the data center users – and they maintain active communication and partnership regarding operational efficiency. They relayed a sincere partnered focus on minimizing the natural resource needs and impacts of new data center buildings.

We are eager to learn more in 2024 through our engagement work with companies that use or supply data centers.

3. Engagement Via Shareholder Proxy Resolution Filling in 2023:

We co-filed a resolution this past year in 2023. While a shareholder resolution does not obligate a company to act, it can certainly send a signal about shareholder concern and interest. This is our third year of co-filing any resolution. Some resolutions lead to more robust dialogue and change than others.

This current resolution seeks a **moratorium on deep sea mineral mining** and aims to preempt the expansion of biodiversity impacts from irreversible, destructive undersea mining/dredging for electric vehicle (EV) batteries' minerals, and block a currently small and niche business gaining a further foothold with the EV automotive industry. *[As of the publication date of this report, we sold our company shares for a number of reasons; as a result, we will not be able to pursue a dialogue on this resolution].*

Language of Resolution:

WHEREAS: *The deep sea contains many of the planet's intact ecosystems and plays a crucial role in regulating the climate.*

1. *Studies indicate that mining this underexplored and complex area for battery related minerals will create irreversible habitat and ecosystem loss and could permanently destroy invaluable carbon storage.*
2. *Deep sea mining (DSM) can obliterate sea floor life through dredging, while releasing sediment plumes laced with toxic metals, poisoning marine food chains.*
3. *Deep sea organisms are slow-growing and fragile, and habitats can require millennia to recover from disturbances.*
4. *The likely outcomes of DSM include biodiversity loss and jeopardized fish-based livelihoods and food supplies.*
5. *Further, industrial scale exploitation of the seafloor could have grave consequences for the ability of the oceans – one of the planet's biggest carbon sinks – to absorb carbon dioxide, and may even lead to release of carbon stores.*
6. *Scientists warn that DSM, even done cautiously, could be devastating. The scientific uncertainty and potential catastrophic impacts of DSM have led many civil society groups, including governments, private organizations, and manufacturers to voice concern. Twenty-four governments have put in place a ban, moratorium, or precautionary pause on DSM.*
7. *Electric vehicle (EV) manufacturers including BMW, Volvo, Volkswagen, Rivian, and Renault have committed to a global moratorium on deep sea mining, pledging to keep their supply chains deep sea mineral free until scientific findings are sufficient to assess the environmental risks of DSM.*
8. *Peers adopting the moratorium underscores the precautionary principle and the availability of more sustainable methods to obtain necessary materials. For example, the BMW Group emphasizes that "its sustainability strategy is also relying more on resource-efficient closed-loop material cycles – with the aim of significantly increasing the percentage of secondary material in vehicles."*
9. *Unlike its peers, [redacted] has not supported a DSM moratorium, leaving shareholders concerned that the Company is not addressing the serious reputational and regulatory risks of DSM. The supply of deep sea minerals is also legally, technologically, and financially insecure, making it expensive and risky for [redacted] to incorporate deep sea sourced minerals into its supply chain.*
10. *DSM is also at odds with the KunmingMontreal Global Biodiversity Framework.*
11. *By committing to a global moratorium on DSM and an ocean mineral free supply chain, [redacted] will join the ranks of Google, Samsung, Microsoft, Salesforce, Philips, and its EV peers by protecting a critical ecosystem and reaffirming its commitment to responsible sourcing.*

RESOLVED: Shareholders request that [redacted] commit to a moratorium on sourcing minerals from deep sea mining, consistent with the principles announced in the Business Statement Supporting a Moratorium on Deep Sea Mining.

SUPPORTING STATEMENT: If [redacted] cannot so commit, shareholders request that the Board disclose its rationale and assess the Company's anticipated need for deep sea materials.

Previously Co-filed Resolutions Update

Climate Transition Plans Resolution and **Climate Lobbying Resolution**: Both of these resolutions from the 2022 season were to technology companies. The climate transition plans resolution was to a chip manufacturer, who since the filing of the resolution gave strong enough reassurances about their focus on transition plans for Paris-aligned targets that the resolution was withdrawn by agreement with our lead filer. We are continuing to monitor their progress and have it as an engagement priority. The other resolution concerned climate lobbying and did appear on the shareholder ballot. Our lead filer partners shared our dismay when this resolution did not garner significant support in the vote – it seemed to stem from a willingness to give the company credit for some of its other publicly known good works. We continue to keep climate lobbying as an engagement priority for this company.

4. Policy Engagement / 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 in conjunction with the organizations US Sustainable Investment Forum (US|SIF) and Ceres, joining forces with other investors and corporations to make visits to Congressional offices through both organizations. We are eager to contribute our voice to policy makers most effectively via a coalition of investors and companies that share our perspective. In the noise of some backlash against ESG (environmental, social, and governance) and sustainable investing during the past year, it was encouraging to support and hear from leaders of the Congressional Sustainable Investment Caucus led by Juan Vargas (CA) and Sean Casten (IL) launched in 2023, and to know there is at least a vehicle for education for policymakers. A core piece of the message we took to Capitol Hill was how the Inflation Reduction Act and legislation encouraging renewable power expansion across the grid was a critical lever to the companies we invest in to be able to meet their emissions reduction targets.

With the US Securities and Exchange Commission's (SEC's) final ruling on climate-related disclosures on March 6, 2024, we continue to monitor its path and probable legal challenges. Regardless of the SEC's final rules, the prevalence of climate disclosure standards in the European Union and elsewhere means multi-national US corporations will already be required to further disclose more complete Scope 1 and Scope 2, as well as the key consideration of Scope 3. If the SEC mandated this disclosure from US companies it would be a significant push forward.

Proxy Voting Record

Voting our shares is something we consider a foundational expectation of our shareholder engagement and fiduciary responsibility on behalf of our investors. We vote at all the annual meetings for companies except in cases where the international local structure for holding our shares prohibits it. We vote according to our internal Proxy Voting Policy, and use Glass Lewis as our administrator to execute our votes, while retaining final say on every vote we place. From January 1, 2023 through December 31, 2023 Terra Alpha participated in 1,004 votes. We voted with management 647 times, against management 92 times, took no action 214 times, and had 48 votes that were mixed. We voted against management on proxy items related to Social issues on 1% of votes (9/1004), and 7% of the votes were against management on Governance topics (72/1004). Our votes aligned with Glass

Lewis's own recommendations 684 times, against Glass Lewis's recommendations 58 times, took no action 214 times, and had 48 votes that were mixed.[7]

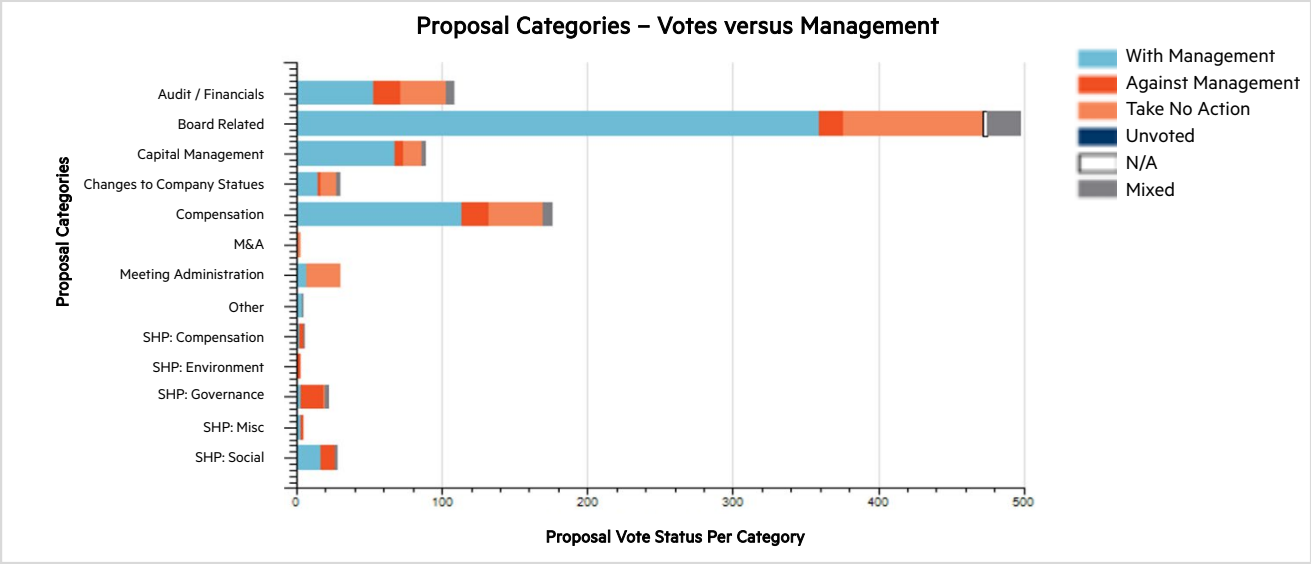


Figure 20. *Terra Alpha's 2023 proxy voting record as compared to management.*

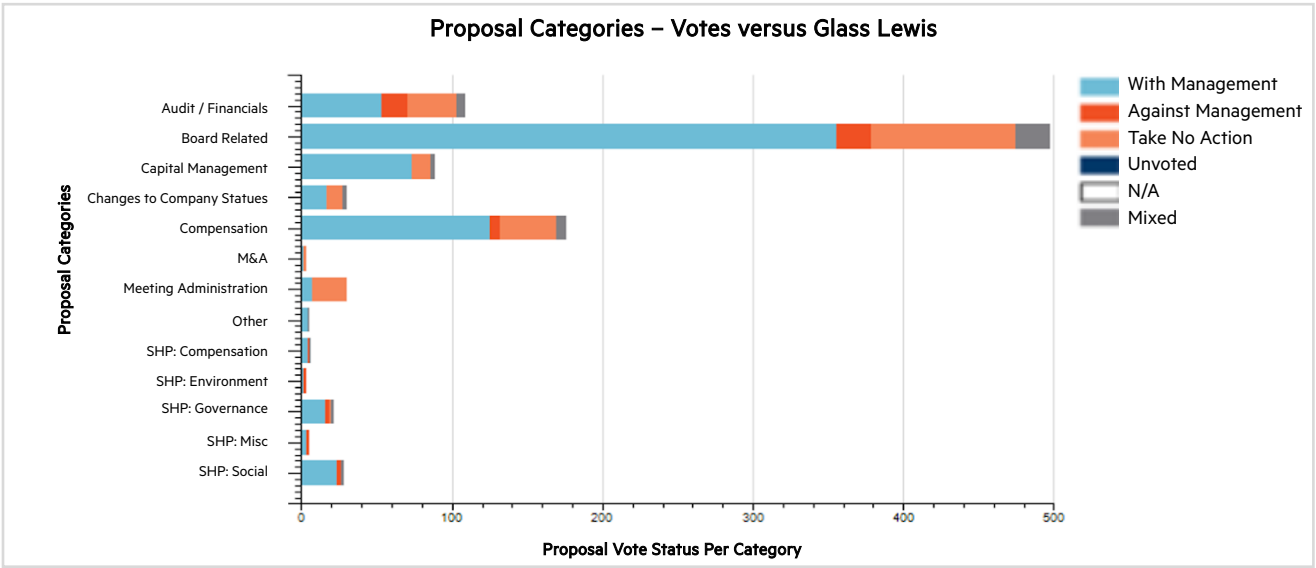


Figure 21. *Terra Alpha's 2023 proxy voting record as compared to Glass Lewis.*

[7] *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

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 2023 we published the following EP Insights:

EP Insight, May 2023 | Unilever's Cloud Migration

EP Insight, August 2023 | Battery Passports

EP Insight, December 2023 | Wind-Assisted Cargo Ships

Terra Alpha Voices

In November 2020, we launched Terra Alpha Voices, a series of interviews created in partnership with author and photographer KK Ottesen. The purpose of Voices is to share perspectives about the big issues that are shaping our lives.

In 2023 we published the following Terra Alpha Voices, featuring true thought leaders:

Terra Alpha Voices | Kathy Baughman McLeod

Terra Alpha Voices | Dan Sanborn

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 $54,359 as of year-end 2023. (See the box below for further information).

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

+ Carbon Disclosure Project's (CDP) Open Letter to Governments on the Plastics Crisis,
+ Nature Action 100+,
+ Ceres Network lobby day,
+ US Sustainable Investment Forum (US|SIF) Capitol Hill Day – Sustainable Investment Caucus and Freedom to Invest,
+ 1% for the Planet, and
+ Intentional Endowments Network's (IEN) Net Zero Leadership Committee.

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 year-end 2023, we have donated **$54,359** to nonprofits, including:

+ 1% for the Planet
+ CDP (formerly Carbon Disclosure Project)
+ CERES
+ Columbia Earth Institute
+ Intentional Endowments Network (IEN)
+ Sustainability Accounting Standards Board (SASB)
+ UN Principles of Responsible Investment (PRI)
+ US Sustainable Investment Forum (US | SIF)
+ World Resources Institute
+ Yale Environment 360

CDP DRIVING SUSTAINABLE ECONOMIES
US|SIF Sustainable Investment Forum
PRI Principles for Responsible Investment
SASB
YaleEnvironment360
1% FOR THE PLANET
Ceres Sustainability is the bottom line.
WORLD RESOURCES INSTITUTE
Intentional Endowments Network
COLUMBIA CLIMATE SCHOOL THE EARTH INSTITUTE

Education, Transparency, and Reporting

In 2023, 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 2023. Some highlights include:

1. Terra Alpha added an Advisory Board member, Kathy Baughman McLeod, with deep expertise in physical climate risks and resilience.
2. We have continued to report our "financed emissions" using The Partnership for Carbon Accounting Financials (PCAF) methodology. (See Appendix 1).
3. CIO Tim Dunn sat on the Sun Valley Forum's Catalytic Climate Finance: Total Resource Activation panel moderated by Confluence Philanthropy's CEO & Co-Founder, Dana Lanza.
4. Tim and Senior Investment Analyst & Director of Research Julianna Brunini participated in a Climate Finance study led by master's students in a Sustainability program at American University.
5. Tim was interviewed for an academic study on the impact of the "anti-ESG" movement in the US by a graduate student at the University of Edinburgh.
6. Tim was interviewed by Plantings magazine.
7. Director of Corporate Engagement Amy Dine led Terra Alpha's effort in submitting our 2023 Report to Principles for Responsible Investment.
8. The Energy Impact Podcast interviewed Tim on his perspectives on climate and the transition to a sustainable economy.
9. Amy attended and joined a panel on Shareholder Engagement at the Confluence Philanthropy Advisors Forum in New York City.
10. Julianna presented Terra Alpha's approach to net zero investing to the Intentional Endowments Network's Net Zero Endowment Steering Committee.
11. Tim and Business Development Analyst Abdulrahman Gabriel attended the 2023 Intentional Endowments Network's Climate Summit in Miami, FL. Terra Alpha was a sponsor of the conference.
12. Tim and Amy attended the 2023 Confluence Philanthropy Practitioner's Gathering conference in Boston, MA. Tim was a panelist on Net Zero Climate Solutions. Terra Alpha was a sponsor of the conference.
13. Terra Alpha published our Investor Climate Action Plan (ICAP) that directly lays out the climate-related investment strategy actions.

VIII. Conclusion

Terra Alpha remains firmly committed to driving the corporate sector to be successful and aligned with our planet's natural resources boundaries. We are conscious of the meaningful impact corporations play in society and continue our intentional efforts to catalyze capital markets to enable a sustainable future for all.

In our investment portfolio decision-making and engagement strategies, we work to enable a sustainable planet for the future through transitioning to a truly sustainable economy. This 2023 Impact Report presents our work to shift our capital markets in the past year. Through our commitment to NZAM, the CFA DE&I Code, our own portfolio EBM and EP analyses, engagement, stewardship, advocacy, and thought leadership, we aim to shift the capital markets to reflect that sustainable corporate operations, and the overall considerations of people and planet, can be a successful and positively impactful investment strategy.

Looking forward, our 2024 focus builds upon what we share in this report. **Investing and engagement can be an iterative process, and we anticipate impact in the year ahead via:**

- Continuing our drive to bring our portfolio companies to validated science-based targets (SBTs) and action plans to achieve them,
- Holding our companies and firm to high standards of DE&I,
- Using a science-based targets for nature-oriented framework to illuminate water-use management more broadly and deeply across the portfolio,
- Intensifying our waste and biodiversity risk considerations including FLAG, and
- Deepening our assessment of Scope 3 emissions in our investment process.

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

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:

$$Financed\ emissions = \sum_{c} Attribution\ factor_c \times Company\ emissions_c$$

$$(with\ c = borrower\ or\ investee\ company)$$

For listed companies:

$$Attribution\ factor_c = \frac{Outstanding\ amount_c}{Enterprise\ Value\ Including\ Cash_c}$$

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.

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 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 estimated data, sourced from S&P Trucost via the CapitalIQ Pro platform (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 2022 emissions data appeared in a longitudinal data series with restated 2021 and 2020 emissions, we generally used the 2021 and 2020 restated historical data points for improved year-over-year comparability to 2022.

Time lag: For our 2023 portfolio holdings, the most recently disclosed company emissions data is typically from calendar year 2022. As such, our 2023 financed emissions disclosures are "preliminary," because we will update them to reflect 2023 calendar year company emissions when such data is widely available.

Mapping of most recently available emissions data for Terra Alpha's financed emissions calculations:

Terra Alpha portfolio composition	**CY 2023 holdings**	CY 2022 holdings	CY 2021 holdings	CY 2020 holdings	CY 2019 holdings
Most recent company-reported data available[8]	**CY 2022 emissions data**	CY 2022 emissions data	CY 2021 emissions data	CY 2020 emissions data	CY 2019 emissions data

Market-based vs. location-based (Scope 2): Terra Alpha uses location-based Scope 2 data whenever available. If location-based data was unavailable, market-based Scope 2 data is used instead. Of our 2023 year-end portfolio companies, only 3% required us to use 2022 market-based data.

Appendix 2: Calculation of Other Carbon-Related Metrics

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

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.

[8] 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.

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: Environmental Performance Data for TAI Operations

While reducing the emissions associated with our investing activities (our "financed emissions," or "portfolio emissions") is our top priority, it is still necessary to account for and reduce emissions that allow Terra Alpha to effectively function as an investment firm – otherwise known as operational emissions.

The top two drivers of our firm's operational emissions are electricity consumption (used in our DC office space and when employees work from home) and our business travel. We have identified electricity consumption (Scope 2 emissions) as our top priority for reduction and, in accordance with the Science Based Targets initiative's guidance, set a goal of reducing our absolute emissions 46% by 2030 versus 2019. When our lease came up for renewal in 2022, we decided not to expand our office space, and an important consideration in this decision was space efficiency to avoid increasing our operational emissions. Decarbonization of the local grid and renewable power procurement are our other two main opportunities for achieving our 2030 target.

Although we do not have a formal target regarding business travel emissions, we seek to minimize travel-related emissions through thoughtful planning – such as maximizing the number of client or prospect visits per flight or combining work travel with personal travel when feasible. We continue to collect detailed data on each business trip to track our annual emissions.

TAI LLC: Operational Greenhouse Gas Emissions Inventory

Tonnes of CO2e	2019	2020	2021	2022	2023	Commentary
Scope 1	0	0	0	0	0	Terra Alpha's Scope 1 emissions are negligible
Scope 2* (DC Office), location-based	10.9	8.7	7.8	9.0	10.3	Increase between 2022 and 2023 driven by an increase in our office building's electricity consumption and a decrease in the office building's occupancy rate
Scope 2* (Work from Home)	0.3	3.6	1.9	1.5	1.2	The decrease between 2022 and 2023 was due to fewer working from home days by TAI employees
Sub-total: Scope 1 and Scope 2	11.2	12.3	9.7	10.5	11.5	
Scope 3 Categories 1-14	20.2	2.8	6.2	11.8	15.1	The increase between 2022 and 2023 was due mainly to greater business travel and employee commuting

Total: Scopes 1, Scope 2, and Scope 3	31		15	16	22	26.6

**Our Scope 2 emissions estimate is based on two sub-components: (1) our estimated pro rata share of our office building's electricity consumption, based on The Climate Registry's "area method," and (2) our estimated work-from-home electricity consumption, which is driven by employee-reported remote work days. The Climate Registry's "area method" was determined to be the best Scope 2 estimation methodology for our leasing situation, because we lease and occupy a fraction of one floor in a commercial office building (see General Reporting Protocol, v3, page C-10).*

Water (cubic meters)	2019	2020	2021	2022	2023	Commentary
Water consumption (DC Office)	183	166	140	140	184	*Reflects Terra Alpha's proportional share of total water consumption by the office building, based on information provided by building manager*

Waste (tonnes)	2019	2020	2021	2022	2023	Commentary
Waste generation (DC Office)	2.4	2.0	2.5	0.8	0.5	*Reflects Terra Alpha's proportional share of total waste generated by the office building, based on information provided by building manager*