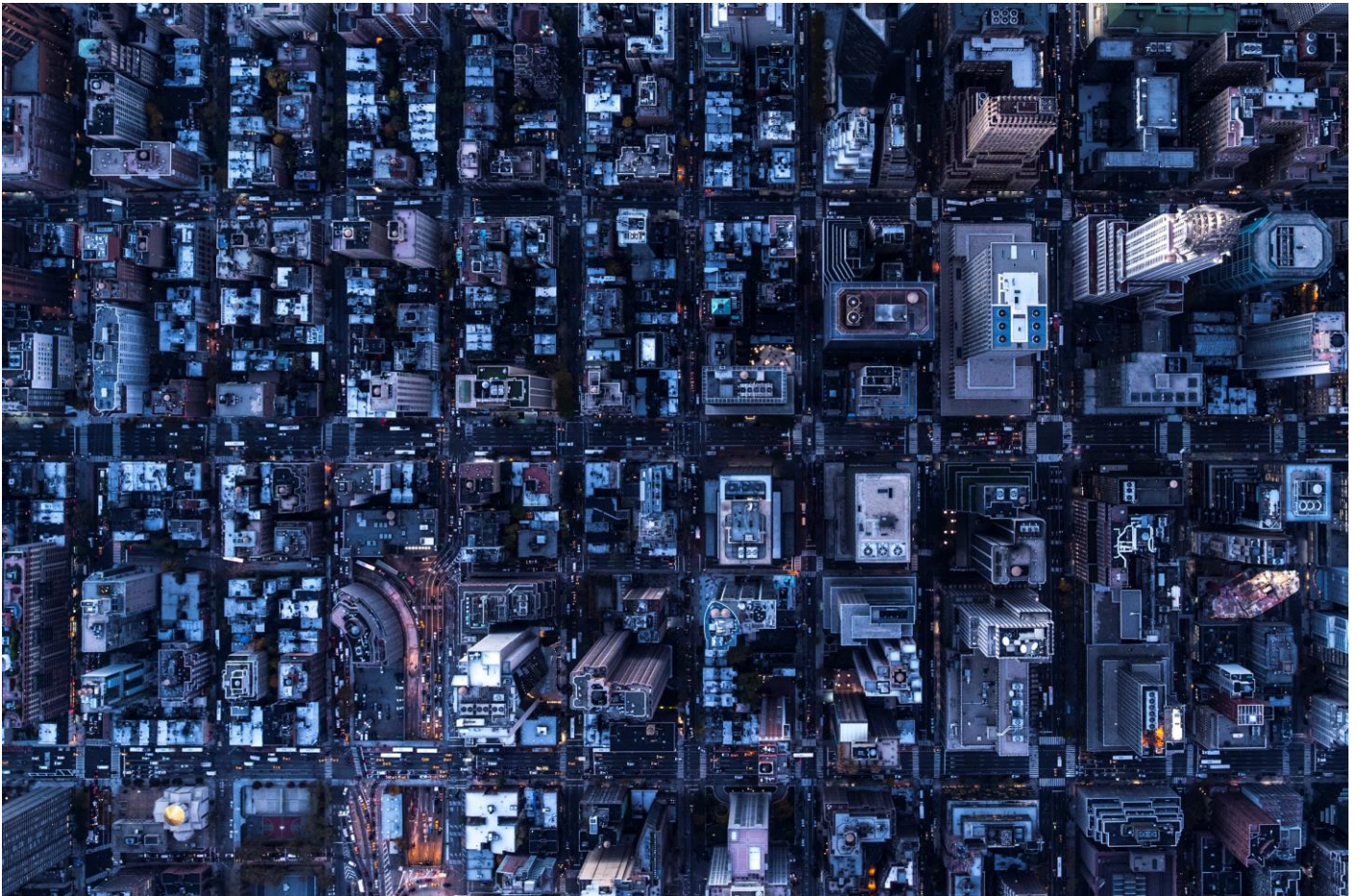


# Generation Investment Management Global Equity Quarterly Investor Letter

July 2023



*Dear fellow investors*

After a tough year, the past quarter brought greater stability.

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## **Markets are enjoying a period of optimism, provoked by recent developments in generative artificial intelligence (“AI”).**

Some believe that inflation, at last, is falling. Against expectations, global economic growth is holding up. Markets, though, move in cycles of greed and fear. Over the remainder of 2023 it will become clear whether the darkness of 2022 is really about to lift.

Some companies have performed strongly in the past year such as Applied Materials, profiled in depth later in this letter. So have other companies we believe are poised to benefit or are already benefitting from generative AI, including Palo Alto Networks and Microsoft. Healthcare, by contrast, has been somewhat of a drag over the past year, with Baxter, Henry Schein and Becton Dickinson detracting from performance.

We believe strongly in the quality of your portfolio. Take our proprietary measures of “business quality” and “management quality,” the two crucial ingredients of our investment process. Average BQ is at an all-time high, while average MQ is above the long-run average. As part of our focus on business quality, we are reducing the number of companies in your portfolio. We currently hold 45 names, versus 49 this time last year.

In the earnings season for the first quarter of 2023, your portfolio generally performed well. Corporate earnings have proven more resilient than expected, defying widespread worries about a global economic slowdown or recession. In the second quarter of 2023, aggregate portfolio revenues were up 10% on the prior year. The median company in your portfolio saw modest operating income growth in a difficult environment. That has raised our conviction, already high, in the quality of your portfolio. The companies are well managed and high quality. Crucially, too, we believe they are driving the world to a more sustainable future.

### **THE INVESTMENT PROCESS**

The second quarter of 2023 will be remembered as the period when AI truly entered the public consciousness. Everyone has heard of it. Millions of people now use ChatGPT, the most popular bot, on a daily basis. The technology holds great promise — though at this stage it is hard to see where value will durably accrue.

A few points of consensus are emerging around AI. One is that AI will not have an economic impact overnight. Companies large and small must first experiment with generative-AI tools and then decide what works for them and what doesn't. On this front there is a long way to go. We estimate, for instance, that GPUs (or graphics processing units, an essential part of AI infrastructure) are used in only 7% of all servers globally (though they are installed on 25% of new units and more in the public cloud). We have had dozens of conversations with your portfolio companies. Almost all are exploring generative AI, and some concrete use cases are emerging. Still, like the personal computer and the internet, it will be some time before generative AI truly ‘diffuses’ over the economy at large.

Another point of consensus relates to the big winners. In the California gold rush of the 1840s, the people who did best were, apocryphally, those who made the picks and shovels to get the gold out of the ground — rather than the people who actually got their hands on the metal.

So far something similar seems to be happening with AI. Makers of computing power and chips are doing well. Nearly everyone has heard about Nvidia's soaring share price, but

there are others too: for example Applied Materials, a semiconductor capital-equipment manufacturer, which we believe is in pole position to benefit from generative AI.

There will be other winners and losers. From our work on Palo Alto Networks, it is clear that AI will have a big impact on cybersecurity, though it is likely to help the attackers as well as the defenders. Texas Instruments — which, for those who have read [our recent review](#) of the popular book *Chip War* will know, is one of the pioneers of the semiconductor industry. The company is a master of vertical integration, meaning that it controls lots of stages of the production process itself, rather than relying on outsiders. This, we believe, is an asset in a world where globalisation is fracturing and supply chains are less reliable. The company also judiciously allocates capital to high-yielding projects.

As research-intensive investors, we always try to stay one intellectual step ahead of the rest of the market. We completed our first Roadmap on AI in 2017 — long before interest in the subject took off. But in the past quarter we have been especially active. We are launching an entire research cluster focused on AI, and are exploring the relationship between AI and industrial companies, financial services and consumer firms. At the same time we are also thinking about AI regulation, which in its present form looks inadequate to deal with the onslaught of innovation in the space. The next section of our letter will focus on some of the key findings of our work so far. We look forward to sharing our thinking as we continue to evolve our research.

In one internal paper published in June, we explored the effect of AI on developers. The highest-performing companies are releasing software updates thousands of times a day. Generative AI tools such as ‘co-pilots,’ to help coders code better and faster, could therefore be useful — with some companies, such as Microsoft, already using them at scale.

The business effects of these changes are harder to predict. On the one hand it could democratise access to coding. People can increasingly input natural language (how we talk to each other) in order to code something, rather than computer jargon. This could free up time to focus on real-world business problems. A lot of development has traditionally involved ‘busy work,’ such as copy-and-pasting snippets of code and finding bugs in existing code. Generative AI removes these tasks.

These developments will change the industry. The best coders of the future are likely to be the ones with good interpersonal and business skills as well as technical nous. Software is likely to become more responsive to real human needs, rather than humans needing to respond to what is technically possible. This new reality poses risks and opportunities for different companies.

Another piece of recent research focused on energy consumption. Emissions associated with semiconductors could sharply rise in the coming years, thanks to strong AI-related demand. Roughly nine in ten of the world’s most advanced computer chips are made in Taiwan — and at least a third of Taiwanese electricity is coal-powered.<sup>1,2</sup> That is, clearly, a problem. One solution is to manufacture chips in ‘cleaner’ locations. Others argue that improvements in chip efficiency could also deliver absolute reductions in emissions over time.

But there is more. We believe that generative AI, in aggregate, could cut more emissions than it creates. One of the first cases of DeepMind’s AI technology was to cut cooling required in Google data centres by 40%.<sup>3</sup> We think generative AI will also enable shared mobility and autonomous driving, helping cut transportation emissions. In addition, AI is

<sup>1</sup> [The Economist](#), May 2022.

<sup>2</sup> [Ember data](#).

<sup>3</sup> Google DeepMind. See blog post [here](#).

helpful to manage ‘smart’ energy grids. The promise, therefore, is that AI not only raises global productivity, but cuts global emissions — a win-win.

At a time of great uncertainty, we rely more than ever on our research capabilities. It is almost impossible to foresee the twists and turns in the global economy and geopolitics: whether inflation will come down or stay high, or how Russia’s invasion of Ukraine will develop. As we explored in a recent [Insights](#) piece, who could have predicted that Europe would cope so well with sky-high energy prices? We do not pretend to know where the market will be in a year’s time. The current high level of ‘market concentration’ — where an unusually small number of firms have driven returns in recent months — could be a concern. On the other hand, the prospects for corporations and workers could be genuinely better than before. We just do not know.

All we can do, therefore, is to be ‘fast followers’ in our investment decisions. This means using our research process to identify excellent companies, and then waiting for the right price. The right price comes either when the market does not realise that a given company has a great future, or when the market is merely down on the company.

The past year has, at times, been difficult. At times markets offer fantastic returns; at other times they dish out humility. Time will tell, but we believe it is highly likely that high quality sustainable companies will continue to generate superior returns over time.

We still have work to do to ensure our decision-making process is as efficient as possible. Back in the very first year of our company, we explored the perils of behavioural biases, such as loss aversion and the endowment effect, in tempting analysts to make bad calls. In our previous letter to you, we outlined more recent work we had done with behavioural economist Herman Brodie on eliminating biases in how people reach decisions. As always, we must focus on *not* forgetting about the tips and tricks we can use to overcome these biases. We are encouraging people to act as devil’s advocates in an attempt to eliminate groupthink, but there is more work to do. We will have more information to share on this front in future letters.

Identifying trends is crucial, but so is stock-picking. We will always aim to buy well-managed, high-quality sustainable companies with attractive returns on capital — that also want to make a positive impact on the world. No matter how the news develops over the remainder of the year, we will continue with that task.

Thank you for your continued support. The total assets under management for the Global Equity strategy as at 30 June 2023 are USD 26.7 billion.



In each quarterly letter, we share examples from your portfolio that bring our investment process to life. This quarter we focus on Applied Materials, Inc. (AMAT), the manufacturer of semiconductor capital equipment.

# Company example



Net zero is not possible without semiconductors. These tiny devices process, store and transmit data. Without them, electric vehicles, automated factories and smart grids are impossible. They are also essential to powering generative AI in all its forms. Yet manufacturing ever smaller, cheaper and more power-efficient semiconductors is difficult and is concentrated in a small number of geopolitically precarious places.

Semiconductor revenue has grown 6% per year since 2010, driven by increasing demand for smartphones, datacentres and electronic content in vehicles and industrial settings.<sup>4</sup> Through work spanning six roadmaps covering many sub-themes within semiconductors (including industry consolidation, capital equipment and generative AI), we are confident that these trends will continue or even accelerate in the coming decades. The rise of generative AI in particular will require high-performing semiconductors, such as Nvidia's GPUs, in datacentres.

Traditionally the industry relied on semiconductor manufacturers to deliver steady advances in semiconductor performance while reducing costs. This phenomenon is known as Moore's Law, which was identified by Intel founder Gordon Moore. Traditionally, Moore's Law relied on shrinking the light source used to expose photosensitive material on a silicon wafer to make smaller semiconductors, which in turn led to falling costs.

In recent years, however, Moore's Law has slowed. Manufacturing has run up against the limits of physics. Making semiconductors smaller more cheaply has therefore become difficult. The latest generation of lithography machines that create this light source are marvels of modern science, but they are also expensive to produce, not to mention power-hungry. Delivering performance improvements in the most advanced semiconductors is now becoming costlier. This presents a risk, both to generative AI and a net-zero world.

All is not lost, however. The semiconductor industry attracts some of the best minds in the world, many of whom are looking at alternative ways to continue to deliver more power-efficient and cheaper semiconductors. A key area of focus is around developing new materials used in manufacturing semiconductors, and new ways of applying ('deposition') and selectively removing ('etch') these materials to create the desired

semiconductor. Applied Materials is one of the companies in the vanguard of these developments.

## OUR INVESTMENT THESIS

Applied Materials has been on the Focus List since 2019. It is the leading semiconductor capital-equipment manufacturer, with 20% market share, and specialises in deposition and etch machines – but this obscures the whole picture. For the most part, Applied Materials does not directly compete with other capital-equipment manufacturers such as ASML (with 16% market share). Semiconductor manufacturing involves thousands of steps, in which individual equipment manufacturers have very high market share. 75% of AMAT's equipment revenue comes from products in which it has >50% market share, for instance.<sup>5</sup> Often this is the result of painstaking co-development with customers stretching back decades.

Applied Materials is benefitting from a number of secular drivers. Global economic growth is one. As the world digitises and adopts generative-AI tools, the use of semiconductors is rising. In addition, as semiconductor manufacturing has become more complex, equipment intensity is rising. For many decades, semiconductor manufacturers spent 10–12% of their revenue on equipment.<sup>4</sup> But that figure rose to 17% in 2022, with industry participants expecting this figure to remain at elevated levels for the foreseeable future.<sup>5</sup> This increase in capital equipment spending means more revenue for Applied Materials.

Demand is also being bolstered by the increasing desire of governments to shift reliance away from Taiwan, and Asia more broadly, for semiconductor manufacturing. 90% of the world's most advanced semiconductors are manufactured in Taiwan, a situation that the US in particular views as undesirable.<sup>2</sup> This view has led to ~USD 400 billion of incentives and grants being announced

<sup>4</sup> Gartner.

<sup>5</sup> Market share datapoints sourced from Gartner.

by governments to boost domestic semiconductor manufacturing over the next five years.<sup>6</sup>

This robust demand, combined with the persistently high market share of companies like Applied Materials, has led to high returns. Applied Materials' operating margin was 30% in 2022, up from 27% in the last cyclical peak of 2018.

There are, of course, threats to Applied Materials' business. First, semiconductor capital-equipment manufacturing remains cyclical. Government incentives to shift semiconductor manufacturing will not last forever.

Second, in the short term Applied Materials is losing out from the decoupling of the Chinese and Western semiconductor ecosystems. Applied Materials' revenue from China peaked at 36% of the total in the third quarter of 2021, but is now down to 21%.<sup>7</sup> US Department of Commerce restrictions have made it more difficult for Chinese semiconductor manufacturers to access equipment from companies like Applied Materials or Lam Research. We do not foresee this trend reversing. However, the decline in Chinese revenues has been offset by strength in other geographies that are trying to reduce their reliance on Asian manufacturing.

## MANAGEMENT QUALITY AND SUSTAINABILITY

We view Applied Materials' management team as well qualified to navigate these challenges. In CEO Gary Dickerson, Applied Materials has a leader who has continuously invested for the long term. Applied Materials was one of the first companies to establish a separate business unit focused on serving companies that manufacture on the 'lagging edge': older yet still important semiconductor technologies used in industries like autos and industrials. Applied Materials' gains in market share here have enabled it to weather the current downturn in semiconductor markets better than their peers. This is because lagging-edge growth has proved resilient. The company has also invested heavily in its Services business, where revenue per installed tool increased 1.5x between 2015 and 2021. Services is a less cyclical business than selling capital equipment and should dampen some of the volatility in Applied Materials' revenue.

The Applied Materials management team are taking a proactive approach to sustainability. Semiconductor manufacturing itself still has a long road to travel to get to net zero. In Applied Materials' case, Scope 3 emissions are difficult to reduce because of one large customer doing most of its manufacturing in Taiwan, where over one third of the grid is powered by coal.

Applied Materials, although yet to set a net-zero target, have been driving the semiconductor industry to take a system-wide approach to net zero through the SEMI trade body. They have also set a 2030 target of reducing their Scope 1 and 2 emissions by 50% (from a 2019 baseline). We expect a net-zero commitment from Applied Materials very soon.

<sup>6</sup> Applied Materials Q2 2023 Earnings Call.

<sup>7</sup> fsdg

<sup>7</sup> Applied Materials quarterly reporting.

# Stewardship and engagement

We hope that you have seen the [Stewardship Report](#) that we published in May. This gives a full account of ESG integration, engagement and voting in 2022 across Generation and Just Climate, complete with statistics, case studies and full voting disclosure. We very much welcome feedback on the report.

## ENGAGEMENT

This quarter we have issued letters to Focus List companies on two issues: deforestation and equity, diversity and inclusion (EDI).

Deforestation letters went to 15 Focus List companies whose business activities involve exposure to forest-risk commodities. The letter was accompanied by a [guide](#) to our expectations. We gave notice that from the 2024 proxy voting season, we will be voting generally against the re-election of Chairs of relevant companies that have not committed to substantially eliminating deforestation by 2025, whether from supply chains or financing activities. This 2025 deadline is aligned with our commitment to Finance Sector Deforestation Action (FSDA), which we joined at COP26 in Glasgow. Ending commodity-driven deforestation by this date is critical to the essential effort to end deforestation this decade.

EDI letters went to all Focus List companies, again with a [guide](#) to our expectations. Our core ask remains that, alongside disclosing comprehensive EDI data, companies should publish plans — ambitious plans — for achieving the diversity they seek.

Our vision of 'good' involves targets to achieve by 2030 or sooner:

- gender parity on the Board, executive committee and throughout the organisation
- racial and ethnic representation throughout the organisation that reflects the societies from which the company recruits and the customers that the company serves
- no structural differences in the roles performed by women and minority employees.

The next step in our EDI engagement programme is to undertake follow-up engagement with priority companies.

## VOTING

After longstanding engagement to encourage companies to join the Science Based Targets initiative (SBTi), 64% of Global Equity Focus List companies either have validated Science Based Targets (SBTs) or have committed to set SBTs.

This proxy season we have started to exercise votes against directors (typically the Chair) where companies have not yet committed to participating in SBTi. This builds on our prior practice of voting against directors where companies were not disclosing their GHG emissions. So far this year, we have exercised votes against directors at seven companies because of the absence of a commitment to SBTi.

The first of the companies at which we voted against the Chair has now committed to setting both a near-term SBT and long-term net-zero target with SBTi. We look forward to more companies following suit as we strive to achieve at least 60% SBT coverage (by validated targets) in your portfolio by 2025.

## QUARTERLY PORTFOLIO METRICS

This quarter we have implemented a re-vamp of the quarterly ESG metrics that we show you in our investor letters. The purpose of the changes is to ensure that we publish metrics that are most relevant to our sustainability analysis and that come from the data providers we use internally.

These are the main changes:

### Environmental

- We now show emissions-intensity data from MSCI rather than Trucost. This allows us to show emissions intensity in terms of the emissions scopes of the GHG Protocol, rather than the bespoke approach used by Trucost. While the Scope 3 emissions data is estimated, we believe that it is important to try to give insight into emissions across all Scopes and that this data will improve as and when corporate disclosure of Scope 3 emissions improves.



- We dispensed with other Trucost metrics, which are not part of our investment analysis.
- We show more detail on Science Based Targets, breaking the data down into companies with validated SBTs and companies that have committed to set SBTs. Both data points are shown on a portfolio-weighted basis, in line with the Science Based Targets portfolio coverage methodology that we follow for net-zero alignment.
- We show a quarterly Implied Temperature Rise (ITR) assessment. This metric also incorporates estimated Scope 3 emissions data. ITR assessment is not precise, but it is another indicative lens into portfolio alignment that we believe is helpful to show.

### **Social**

- We show a new metric on corporate tax. We believe this is an important measure of a company's contribution to society.
- We display diversity data from a new provider, Denominator. As a result, we are able to show gender diversity data at executive as well as Board level. We can also give insight into living wage commitments and the gender pay gap: while data coverage is not good, we believe these are both important issues on which disclosure will improve.
- Denominator collects data on racial and ethnic diversity as well as gender diversity, meaning that we can disclose a new metric on this. We generally like to show raw data, but in this instance, because of the need to take background population characteristics into account, we believe a score provides the most useful and comparable assessment.
- We dropped the other score-based social metrics from MSCI that we used to show on human capital development and data security, because of their opacity.

- Finally, we added a new MSCI metric on pay linked to diversity targets, as this is something that we advocate in engagement.

### **Governance**

- We no longer show an executive team-tenure metric, which we are not able to benchmark or contextualise.
- We no longer show a comparison of CEO pay to that of other named executives, as this is not generally something we prioritise in analysis and engagement.
- We show a new MSCI metric to identify the proportion of companies with directors who are on too many Boards. This new test for 'over-boarding' aligns with our [Proxy Voting Principles](#) (the metric we previously showed was more strict than our Principles).
- We added new metrics to show the share of companies with regular say on pay votes and pay linked to sustainability targets, as these are governance characteristics we favour.

We introduced the concept of sustainability thresholds in our re-vamp. While we want to continue to show how the characteristics of your portfolio compare to those of the benchmark, sustainability is not a relative concept, but an absolute one. Where we can, we show metrics that indicate how far we are making progress towards the environmentally and socially sustainable portfolio we seek.

We believe we can measure ourselves against real-world thresholds, or at least start to, on some core issues. They are: alignment with 1.5°C; commitment to a living wage; and gender parity (across a range of dimensions). For these metrics, we have introduced a column showing how we define real-world threshold performance.

We look forward to your feedback.

# Portfolio metrics<sup>8</sup>

We provide select Environmental, Social and Governance (ESG) as well as Financial (F) metrics, which we believe best represent the data we use to inform our Business and Management Quality process, out of those currently available for the majority of the portfolio and benchmark. While they are best viewed as an output of our process rather than direct inputs, they also provide us with an additional lens to view the portfolio and stimulate internal discussion.

As well as measuring the portfolio against a benchmark, we are starting to measure it against thresholds too. This is because your portfolio might beat its benchmark in regard to one of the criteria below, but this still might not achieve what is needed for a truly sustainable society. For example: your portfolio has a lower gender pay gap score than the benchmark, but really we want the portfolio, and society more broadly, to move towards eliminating the gender pay gap completely. Therefore, in this situation, our threshold for success would be zero.

## E

	Portfolio	Benchmark	Threshold
Carbon intensity, Scope 1 & 2 (tCO <sub>2</sub> e/\$m) <sup>9</sup>	22	118	
Carbon intensity, Scopes 1–3 (tCO <sub>2</sub> e/Eur m) <sup>10</sup>	464	844	
SBTi target validated (portfolio weight %) <sup>11</sup>	40%	40%	100%
SBTi committed but target not set (portfolio weight %) <sup>10</sup>	32%	16%	
Implied temperature rise (Scopes 1–3, degrees Celsius) <sup>11</sup>	1.8	2.4	1.5

## S

Percentage of employees would recommend the company to friend <sup>12</sup>	74%	72%	
Effective tax rate <sup>13</sup>	18%	23%	
Commitment to a living wage <sup>14</sup>	20%		100%
Gender – female Board % (weighted average) <sup>15</sup>	34%	32%	40–60%
Gender – female executives % (weighted average) <sup>16</sup>	23%	24%	40–60%
Gender pay gap (simple average) <sup>17</sup>	15%	19%	0%
Advanced total race/ethnicity score (weighted average) <sup>18</sup>	40	38	
Pay linked to diversity targets (simple average) <sup>12</sup>	11%	7%	

<sup>8</sup> As at 14 June 2023. This information may no longer be current. To the extent not sourced from Generation, it is from sources believed reliable. However, Generation does not represent that it is accurate or complete and it should not be relied upon. It should not be deemed representative of future characteristics for the Portfolio. For definitions of each metric, please refer to the appendix.

<sup>9</sup> Source: MSCI, weighted average calculation.

<sup>10</sup> Generation analysis based on data from the Science Based Targets initiative.

<sup>11</sup> Source: MSCI.

<sup>12</sup> Source: Glassdoor.

<sup>13</sup> Source: CapIQ. This metric is not shown as above or below benchmark, as one cannot deduce from the number alone whether a company's effective tax rate is a positive or negative; company profits are taxed in a range of jurisdictions with a range of tax rates and permissible deductions. For comparison, the global average Effective Average Tax Rate (EATR) published by the OECD in November 2022 was 20.2%. This was calculated on the basis of data for 2021 from 77 jurisdictions.

<sup>14</sup> Source: Denominator. Coverage is poor for this metric and not adequately representative of the benchmark, therefore no comparison is made.

<sup>15</sup> Source: Denominator.

<sup>16</sup> Source: Denominator. This is a Denominator calculated data point because there is no universally agreed definition of an 'executive' and therefore without a standard method one company's disclosure might represent something significantly different to another's.

<sup>17</sup> Source: Denominator. This metric is a simple average of gender pay gap data disclosed by companies. Coverage is poor and pay gaps are not measured in a consistent way. Nonetheless, we think it is important to show the data available on this metric.

<sup>18</sup> Source: Denominator. This metric is a score out of 100 that measures the company's total performance on racial/ethnic diversity across the Board, executive, and company as a whole. Comparison to background race/ethnicity is calibrated to the country of operations: a company with 100% Caucasian leadership in the US scores less than a company with same ratio in Denmark, due to the different race/ethnicity composition of the background population (higher % of Caucasian in Denmark).

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**G**

	<b>Portfolio</b>	<b>Benchmark</b>
Percentage of shares owned by executives (median) <sup>19</sup>	<b>0.19%</b>	0.09%
Independent Board (weighted average) <sup>20</sup>	<b>78%</b>	79%
Independent chairman or lead non-executive director (simple average) <sup>21</sup>	<b>93%</b>	72%
Board not entrenched (simple average) <sup>21</sup>	<b>73%</b>	81%
All non-executive Board members on no more than four public company Boards (simple average) <sup>21</sup>	<b>95%</b>	91%
Equal shareholder voting rights (simple average) <sup>21</sup>	<b>90%</b>	90%
Independent compensation committee (simple average) <sup>21</sup>	<b>89%</b>	71%
Companies with regular 'say on pay' votes (simple average) <sup>21</sup>	<b>98%</b>	79%
Fewer than 10% votes against executive pay (simple average) <sup>21</sup>	<b>54%</b>	73%
Pay linked to sustainability targets (simple average) <sup>21</sup>	<b>50%</b>	42%

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**F**

Three-year revenue growth (weighted average) <sup>20</sup>	<b>17%</b>	13%
Gross margin (weighted average) <sup>20</sup>	<b>54%</b>	50%
Cash flow return on invested capital <sup>21</sup>	<b>13%</b>	8%

**Data in green: relative performance above benchmark. Data in red: relative performance below benchmark.**

<sup>19</sup> Source: CapIQ.

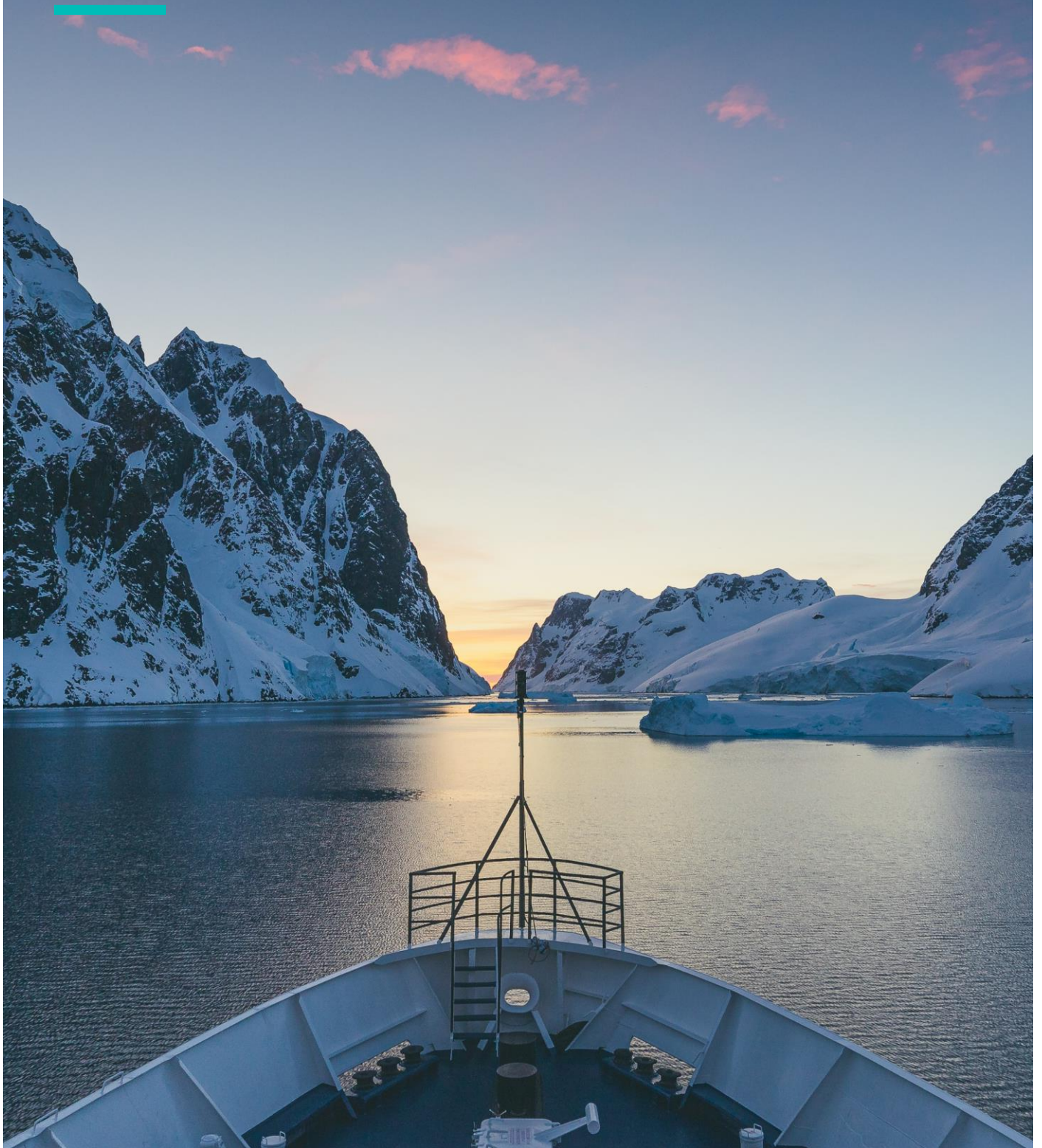
<sup>20</sup> Source: MSCI.

<sup>21</sup> Source : Credit Suisse Holt.

# The firm

Generation has ambitious impact initiatives in addition to our core investment work. We know that to bring about the transformative change required over this decade, we must motivate others.

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We continue our commitment to advance sustainable investment practices and advocate for climate-led investing as its own asset class. We believe the very nature of capital markets is to respond to, and provide a means for, society's ambitions. Expanding what capital markets value to prioritise sustainability impact in capital allocation is essential to our ability to achieve our aspiration for people, climate and nature. We share thoughts on the case for climate-led investing [here](#).

In addition, we were also pleased to [announce](#) the close of Just Climate's inaugural fund, Climate Assets Fund I at USD 1.5 billion. Just Climate was established by Generation to address the net-zero challenge at scale and pursue investments in the highest impact solutions that can radically reduce or remove emissions, while generating attractive risk-adjusted financial returns.<sup>22</sup> Climate Assets Fund I is focused on finding investment opportunities in these harder-to-abate parts of the economy and has already made its [first three investments](#) in ABB E-mobility, H2 Green Steel and Meva Energy.

## SUSTAINABILITY INSIGHTS

This quarter we published [How "Climate NIMBYism" Prevents Net Zero — and What Can Be Done About It](#). The piece examines a trend that is gathering pace, both among activists and politicians. People increasingly recognise that the world needs to build large amounts of clean energy in order to move to a net-zero future. But local regulations, such as NIMBYism, often prevent that from happening. What can be done to change this?

We also published [Europe's Energy Transition: Faster Than You Think](#). This piece examined what happened to Europe's energy mix after it was largely cut off from Russian oil and gas in 2022. It has some surprisingly optimistic findings.

## FIRM AND TEAM UPDATE

As at 30 June 2023, the Generation team is 127 and assets under management and supervision total approximately USD 44.8 billion.<sup>23,24</sup> The Just Climate team comprises 31 people.

Thank you for the trust you have placed in us.



Miguel Nogales,  
co-CIO



Mark Ferguson,  
co-CIO

<sup>22</sup> Just Climate seeks to deliver attractive risk-adjusted financial returns, but there can be no guarantee this goal will be achieved.

<sup>23</sup> Includes subscriptions and redemptions received by the last business day of the quarter but applied the first business day after the quarter-end.

<sup>24</sup> Assets under management as at 30 June 2023 are USD 34.0 billion and assets under supervision (AUS) as at 31 March 2023 are USD 10.9 billion. AUS form part of our Long-term Equity strategy and include assets where Generation sourced, structured and/or negotiated the investment and in relation to which it provides certain ongoing advisory services for a fee.

# Appendix

# New portfolio metrics: definitions

FACTOR	METRIC	SUMMARY DESCRIPTION
<b>Carbon intensity, Scope 1 &amp; 2 (tCO<sub>2</sub>e/\$m)</b>	Weighted average	Aggregate tonnes of GHG emissions (expressed as CO <sub>2</sub> equivalent) per USDm of company revenue.
<b>Carbon intensity, Scopes 1–3 (tCO<sub>2</sub>e/Eur m)</b>	Weighted average	Aggregate tonnes of GHG emissions (expressed as CO <sub>2</sub> equivalent) relative to the company's most recent sales in million Euro. Scope 3 emissions are estimated.
<b>SBTi target validated (portfolio weight %)</b>	Percentage	The percentage of companies in the portfolio with a validated Science Based Target.
<b>SBTi committed but target not set (portfolio weight %)</b>	Percentage	The percentage of companies in the portfolio that have committed to setting a Science Based Target with the Science Based Targets initiative but have not yet had their target validated.
<b>Implied temperature rise (Scopes 1–3, degrees Celsius)</b>	Degrees Celsius	A portfolio level number in degrees Celsius demonstrating how aligned the companies in the portfolio are to global temperature goals. This metric uses an aggregated budget approach: it compares the sum of 'owned' projected GHG emissions on a Scope 1–3 basis against the sum of 'owned' carbon budgets for underlying holdings. Scope 3 emissions are estimated.
<b>Percentage of employees would recommend company to friend</b>	Average	Percentage of participating employees who would recommend the company to a friend. This metric may warrant caution where a small percentage of the workforce report.
<b>Effective tax rate</b>	Weighted average	The effective tax rate is calculated as the company income tax expense divided by earnings before interest and tax (EBIT) including unusual items. We show a three-year average for smoothing purposes and exclude significant outliers.
<b>Commitment to a living wage</b>	Percentage	The percentage of companies in the portfolio that have committed to a living wage. A living wage is defined by the Global Living Wage Coalition as the remuneration received for a standard workweek by a worker in a particular place sufficient to afford a decent standard of living for the worker and their family. Elements of a decent standard of living include food, water, housing, education, health care, transportation, clothing and other essential needs including provision for unexpected events.
<b>Gender – female Board</b>	Weighted average	A weighted average calculation of the percentage of female Board directors on each of the Boards in the portfolio.
<b>Gender – female executives</b>	Weighted average	A weighted average calculation of the percentage of female executives at each of the companies in the portfolio. There is no standard definition of an executive and companies can define the executive level in many different ways. Denominator, our data provider, work to calculate the data point based on standard definitions.
<b>Gender pay gap</b>	Average	The average salary gender pay gap across companies that disclose this metric within the portfolio. The pay gap data used is calculated by each company without any modifications applied. Calculation methods can vary between companies and jurisdictions.
<b>Advanced total race/ethnicity score</b>	Weighted average	This metric is a score out of 100 calculated by our data provider that measures the company's total performance on racial/ethnic diversity across the Board, executive and company as a whole. Comparison to background race/ethnicity is calibrated to the country of operations: a company with 100% Caucasian leadership in the US scores less than a company with same ratio in Denmark, due to the different race/ethnicity composition of the background population (higher % of Caucasian in Denmark).
<b>Pay linked to diversity targets</b>	Percentage	The percentage of companies where there is evidence of a commitment to linking executive pay to diversity and inclusion targets. The metric is calculated as: number of companies where evidence exists divided by the total number of companies in the portfolio.
<b>Percentage of shares owned by executive</b>	Median	Executive share holdings as a percentage of shares outstanding. We show the median for portfolio and benchmark, as the average may be impacted by some companies (often founder run) with large executive ownership stakes.
<b>Independent Board</b>	Weighted average	Board independence is inferred by MSCI. The following categories of director are not regarded as independent: current and prior employees, those employed by predecessor companies, founders, those with family ties or close relationships to an executive, employees of an entity owned by an executive and those who have provided services to a senior executive or the company within the last 3 years. The compensation of a non-executive chair must not be excessive in comparison to that of other non-executives and must be less than half that of the named executives. Where information is insufficient the director is assumed to be non-independent. For the Board to be classified as independent, a majority of the Board members must be classified as independent.

<b>FACTOR</b>	<b>METRIC</b>	<b>SUMMARY DESCRIPTION</b>
<b>Independent chairman or lead non-executive director</b>	Percentage	Percentage of companies which have an independent chair, or, where the chair is not independent, an independent lead director.
<b>Board not entrenched</b>	Percentage	Percentage of companies without an entrenched Board. Board entrenchment is inferred by MSCI using a range of criteria including: >35% Board tenure of >15 years, 5 or more directors with tenure of >15 years, 5 or more directors >70 years old.
<b>All non-executive Board members on no more than four public company Boards</b>	Percentage	Percentage of companies with no over-boarded non-executives. The threshold is where a Board member serves on five or more public company Boards.
<b>Equal shareholder voting rights</b>	Percentage	Percentage of companies that have equal voting rights.
<b>Independent compensation committee</b>	Percentage	Percentage of companies with independent compensation committee. Please see above for the independence criteria used.
<b>Companies with a regular 'say on pay' vote</b>	Percentage	The percentage of companies in the portfolio that have a policy in place to ensure that a firm's shareholders have the right to vote on the remuneration of executives on a regular basis.
<b>Fewer than 10% shareholder votes against executive pay</b>	Percentage	Percentage of companies that received less than 10% shareholder votes against executive pay at the most recently reported annual shareholder meeting. Only applies to companies that have a 'say on pay' vote.
<b>Pay linked to sustainability targets</b>	Percentage	The percentage of companies where executive remuneration is linked to sustainability targets. This metric is based on the company's own reporting. It considers whether one or more sustainability metrics are used to determine annual and/or long-term incentive pay and does not consider the effectiveness of those metrics.
<b>Three-year revenue growth (annualised)</b>	Weighted average	Aggregate (weighted) three-year revenue growth rate to the last reported fiscal year. Revenue growth is not adjusted for acquisitions and disposals.
<b>Gross margin</b>	Weighted average	Aggregate (weighted) gross margin for the last fiscal year. Gross margin is the difference between revenue and cost of goods sold divided by revenue.
<b>Cash flow return on invested capital (CFROI)</b>	Weighted average	CFROI (cash flow return on investment), a (trademarked) valuation metric.



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