



**Sustainable  
Markets  
Initiative**

# PORTFOLIO CONSTRUCTION IN A NET ZERO WORLD

ASSET MANAGER & ASSET OWNER  
TASK FORCE

**October 2021**



---

## ABOUT THE ASSET MANAGER AND ASSET OWNER TASK FORCE

The Sustainable Markets Initiative (SMI) was formed at the invitation of His Royal Highness the Prince of Wales, at the World Economic Forum (WEF) Annual Meeting 2020, with the goal of creating a coalition of parties who share his view that progress towards a sustainable future must be accelerated. The Asset Manager & Asset Owner Task Force is a sub-group of the SMI formed of a group of CEO-level executives from a number of the world's largest asset manager and asset owners. It brings together senior leaders to develop and enable solutions to help accelerate the transition to sustainable markets and support the rapid decarbonisation required across the real economy using the two most powerful levers at their disposal: capital already invested in companies and fresh capital investments directed at climate mitigation and adaptation projects.

THIS DOCUMENT IS THE PRODUCT OF THE NET ZERO ASSET ALLOCATION WORKING GROUP OF  
THE SMI ASSET MANAGER & ASSET OWNER TASKFORCE

Chaired by



With contributions from



# CONTRIBUTORS

---

The SMI Asset Manager & Asset Owner Task Force thank the following contributors for their efforts in support of the Net Zero Asset Allocation Working Group

<b>CDPQ</b>	Bertrand Millot Maxime Dea Camille Crueghe	<b>NZSuperFund</b>	Doug Bell
		<b>PensionDanmark</b>	Jan Kaeraa
<b>Bank of America</b>	Anil Suri	<b>The People's Pension</b>	Nico Aspinall
<b>CalPERS</b>	Anne Simpson Nelson da Conceicao Travis Antoniono	<b>Wells Fargo AM</b>	Hannah Skeates
		<b>State Street</b>	Rick Lacaille Adrienne Zak Lauren Willington
<b>CalSTRS</b>	Chris Ailman Misty Watson		
<b>NEST</b>	Elizabeth Fernando	<b>SunSuper</b>	Stuart Wilson
	<b>Sustainable Markets Initiative</b>		Nick Autiello

# CONTENTS

---

<b>CONTENTS</b>	<b>4</b>
<b>EXECUTIVE SUMMARY</b>	<b>5</b>
<b>INTRODUCTION</b>	<b>7</b>
<a href="#">NET ZERO CONTEXT</a>	7
<a href="#">INVESTMENT UNIVERSE AND GHG CONCENTRATION</a>	7
<a href="#">THREE LEVERS TO REDUCE PORTFOLIO GHG EMISSIONS AND INTENSITY</a>	9
<a href="#">INVESTMENT STYLES AND FACTORS ARE KEY CONSIDERATIONS IN DESIGNING INVESTMENT BELIEFS</a>	10
<a href="#">CONCLUSION</a>	12
<b>INVESTMENT BELIEFS</b>	<b>13</b>
<a href="#">INVESTMENT BELIEFS: A FOUNDATION FOR ASSET MANAGERS AND OWNERS</a>	13
<a href="#">CLIMATE CHANGE BELIEFS</a>	14
<a href="#">GOVERNANCE IN IMPLEMENTATION</a>	15
<a href="#">NET ZERO ACTION LEVERS</a>	16
<b>RISK APPETITE STATEMENT</b>	<b>19</b>
<a href="#">BACKGROUND</a>	19
<a href="#">TIME HORIZON OF CLIMATE CHANGE</a>	20
<a href="#">ADJUST RISK METRICS AND TOLERANCE</a>	21
<a href="#">APPROACH #1</a>	21
<a href="#">APPROACH #2</a>	22
<a href="#">APPROACH #3</a>	23
<a href="#">APPROACH #4</a>	23
<a href="#">ENSURE THAT YOU TAKE VARIOUS SCENARIOS INTO CONSIDERATION</a>	23
<b>INCENTIVES</b>	<b>25</b>
<a href="#">BACKGROUND</a>	25
<a href="#">CLARITY OF OBJECTIVES</a>	25
<a href="#">SELECTION OF METRICS</a>	25
<a href="#">REWARDS</a>	27
<a href="#">CONCLUSION</a>	27
<b>EXTERNAL MANAGERS</b>	<b>28</b>
<a href="#">BACKGROUND</a>	28
<a href="#">ASSET OWNER OBJECTIVES</a>	29
<a href="#">INCORPORATE NET ZERO INTO THE INVESTMENT PROCESS</a>	31
<a href="#">NET ZERO TARGETS</a>	31
<a href="#">NET ZERO OBJECTIVE</a>	32
<a href="#">REPORTING</a>	33
<a href="#">COLLABORATION</a>	33
<a href="#">EXTERNAL MANAGERS INCENTIVES</a>	34
<b>CONTACTS</b>	<b>35</b>

# EXECUTIVE SUMMARY

---

Climate change will have significant physical and economic impacts on many different aspects of human activity. As a systemic issue, climate change will affect all asset types and sectors, will introduce new risks and opportunities, and will impact portfolio returns, asset valuations and asset allocation processes of asset owners. Climate change is a relevant and urgent issue that more and more asset owners are deciding to tackle, in particular by committing to net-zero portfolio emissions by 2050 or sooner.

In this report, the members of the Net-Zero Asset Allocation Working Group, working on behalf of the SMI Asset Manager & Asset Owner Task Force, which represents aggregate assets under management exceeding USD \$40 trillion, propose a framework of principles and best practises to include climate change and net-zero considerations in portfolio construction. This guide is dedicated to all types of asset owners, regardless of their asset class mix or their investment strategies.

Section 1 gives some contextual elements that asset owners should take into account when identifying their options to construct a net-zero portfolio. They should know their portfolio's greenhouse gas (GHG) emissions (by looking at their asset allocation in terms of sector and geography), their characteristics and their investment styles to identify which of the three main levers (pro-climate solutions, divestment, engagement) they could mobilize to mitigate their climate change risks and seize opportunities.

Section 2 discusses how climate change investment beliefs can adequately instill a foundation that provides asset owners with the levers needed to help decarbonize their portfolios and, eventually, the real economy.

Section 3 examines how asset owners can address climate change risks in their portfolio as these risks are completely different from other types of risk that asset owners are accustomed to dealing with (such as liquidity risk, credit risk, interest rate risk, currency risk, etc.).

Tackling climate change through investment portfolios requires a sustained change in investment approach. Section 4 discusses the set of well-designed incentives that can encourage the change asset owners want to happen more quickly and more successfully.

Asset owners can opt for external management strategies, which allow them to engage with external managers. Section 5 proposes specific guidelines to ensure that external managers are aligned with the net zero pathways implemented by asset owners.



# INTRODUCTION

---

## NET ZERO CONTEXT

As asset owners and managers with millions of beneficiaries and clients around the world and as members of the Sustainable Markets Initiative (SMI) – Net-Zero Asset Allocation, we are committed to supporting long-term investments aligned with net-zero emissions by 2050 or sooner, consistent with their fiduciary duties generally consistent with a maximum temperature rise of 1.5°C above pre-industrial levels. This commitment is made in the expectation that governments will provide an environment that leads to a fast and just transition to a low-carbon economy.

This commitment also recognises that asset owners and managers across the globe have different opportunities, constraints and starting points for achieving net zero emissions and there are a range of methodologies and approaches available to asset owners and managers to set targets and implement strategies.

## INVESTMENT UNIVERSE AND GHG CONCENTRATION

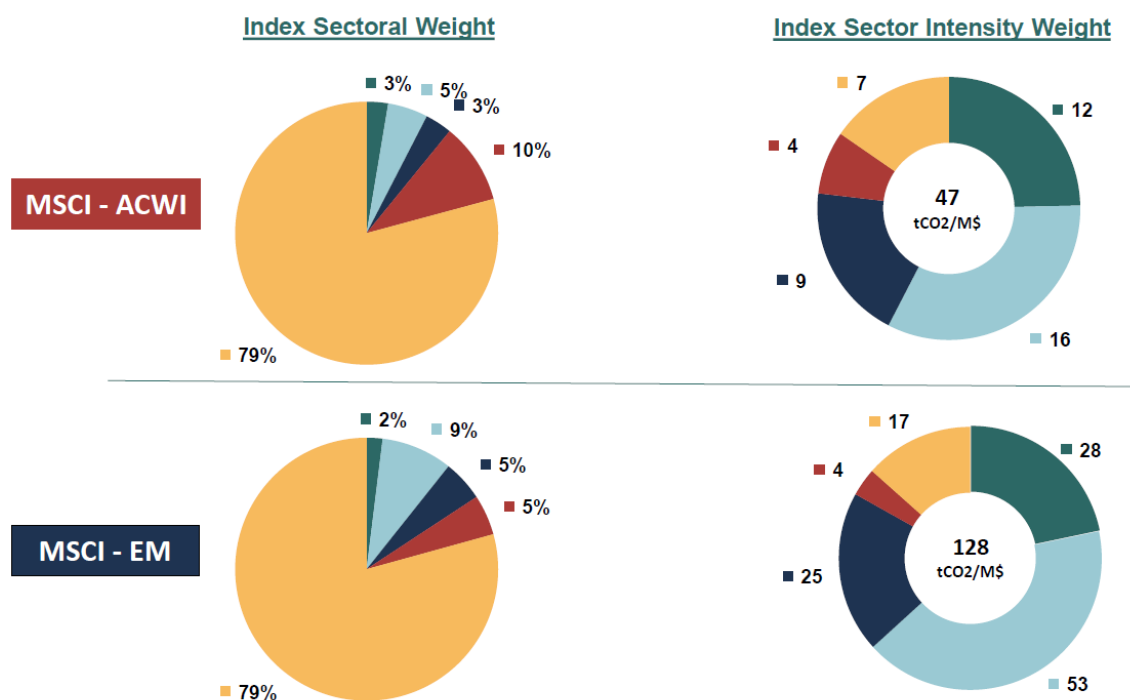
To understand and manage their portfolio's emissions, asset managers and owners need to be more granular in how they view their asset allocation.

The best way for asset managers and owners to understand their portfolios' GHG emissions and mitigate climate change risks is to look at their asset allocations through the prism of sector and geography because the sector and geography of assets are two main drivers of GHG emissions in a portfolio.

The sectoral asset allocation is a major relevant metric as GHG emissions are highly concentrated in 4 sectors: utilities / power generation, materials, energy (oil and gas) and industry. As shown in Figure 1 below, these sectors accounted for 85 % of total ACWI Carbon Intensity (measured in t CO<sub>2</sub> / M\$ EVIC), but only 21 % of index weight as of June 30, 2021. Therefore, if asset managers and owners decide to increase or decrease their asset allocation in one or more of these 4 sectors, this will significantly impact the carbon intensity of their portfolio.

These sectoral considerations are also reflected in the relative intensity of listed equities styles. Quality stocks are generally much less intense (3 to 5 times less) than their value counterparts as the latter are more concentrated in cyclical industries and commodities classified in these intense sectors.

Asset managers and owners should also pay attention to their geographic asset allocation as a relevant metric to manage their GHG emissions. Indeed, as illustrated by Figure 1 below, the MSCI Emerging Markets Index is 2.7 times more carbon intensive than the MSCI ACWI Index. Therefore, geographic asset allocations between developed and emerging markets are key decisions that will involve significant variation in carbon intensity, even if asset managers and asset owners decide to invest in a low-carbon sector such as information technology, financial services, etc.



Note: Scopes 1 & 2 only

Figure 1: MSCI Indices carbon intensity (measured in t CO<sub>2</sub> / M\$ EVIC) as of June 30, 2021  
By having access to more information in terms of sectoral and geographic asset allocation, asset owners and managers will be better equipped to think about methodologies and approaches to implement net-zero pathways with their portfolios.



## THREE LEVERS TO REDUCE PORTFOLIO GHG EMISSIONS AND INTENSITY

Asset owners and managers generally have three levers to manage the climate alignment of their portfolio: invest in pro-climate green solutions, reducing portfolio emissions by divestment or engaging portfolio companies to reduce their emissions and thus the portfolio's. These are not mutually exclusive approaches.

Mainstream pro-climate solutions have historically been concentrated in two sectors: renewable energy (wind, solar, geothermal, biomass) and green buildings. Some investors have also been able to invest in sustainable transportation (public transit, transport electrification, rail transport). We expect that other opportunities in nascent fields will become available to mainstream investors as they scale up from venture capital to substantially derisked investment propositions. These may include new fuels (green hydrogen, waste-to-liquid fuels, etc.), battery technologies, fossil-fuel-free structural plastics, carbon removal solutions (CCS), etc. Generally, these investments have very low emissions or lower emissions than the rest of the economy. Investing in such assets will reduce the average intensity of a portfolio (less GHG per M\$ invested). In portfolios of a stable size, the replacement of intense assets by greener ones will reduce the portfolio footprint, while in growing portfolios, the addition of greener assets will have a minimal contribution to the growth of the portfolio footprint.

Divestments of intense assets is a relatively expedient solution to portfolio decarbonisation, particularly in liquid markets as intense assets are shed and replaced by less intense ones. It is also useful to reduce exposure to certain industries with a very uncertain future as demand for their product wanes or regulatory action tightens. The thermal coal value chain from mine to power plant is an example where the risks of stranded assets is high and the future, at least in advanced economies, is bleak. Divestments can also be used as a last resort where the investee company is unresponsive to engagement (see below). While divestment has an immediate effect on portfolio emissions, this practice is often criticized for its lack of impact on the real economy. The assets are shifted from one balance sheet to another while they continue to produce GHGs unabated. Some argue that in the long-run as divestments become more widespread, the cost of capital of these companies will increase providing an incentive to reduce their emissions or accelerating their demise. Unfortunately, it appears that in the short run these signals are faint.

Engagement is the third option to reduce portfolio emissions. It consists in influencing portfolio companies to consider climate change seriously, include it in their strategy work, reduce their emissions and disclose their efforts following best-in-class reporting frameworks such as the TCFD. This can take several forms depending on the asset class, ranging from shareholder votes,

meetings between investors and boards / C-suites or direct actions through investor-appointed board members (largely in private equity assets). For instance, in May 2021, a majority of ExxonMobil shareholders voted to replace three of the oil major's board of directors with three candidates experienced in clean energy and energy transitions, in order to call for climate action at ExxonMobil.

Engagement has the immense benefit of fostering real economy decarbonization, but is painstaking, has a slow impact on portfolio emissions and requires a hands-on resource intensive approach on the part of investors although there are options to externalize engagement through collective organizations (such as Climate Action 100+) or commercial service providers. Long-term investors will see their portfolio emissions reduce as investee companies reduce their GHG output, but that benefit may not accrue to shorter term investors or may be eroded as long-term investor adjust portfolio holdings.

**Complementary approaches:** These three options can be combined and applied together. For instance, some investors may divest from companies involved solely in coal-fired power generation, redeploy that capital into low-carbon initiatives such as renewable energy and define an engagement strategy for utilities operating a diversified mix of generation assets to foster the gradual greening of their fleet. However, how an asset owner leans more towards one approach than the other will be influenced by the characteristics, investment styles and factors of each asset owner.

## INVESTMENT STYLES AND FACTORS ARE KEY CONSIDERATIONS IN DESIGNING INVESTMENT BELIEFS

Asset managers and owners should be aware that their characteristics and their investment styles and factors will significantly influence how they manage their portfolio's GHG emissions and give them considerable net zero pathway leeway.

First, asset managers and owners are two different types of investors which do not have the same freedom of action over their assets. Asset owners have ownership of assets while asset managers act as agent on behalf of clients and are tasked to implement certain investment strategies. As a result, unlike asset owners, asset managers may not be able to decide for themselves whether they should or even can achieve a net zero pathway within their portfolio, and they have to consult with their clients in order to change their investment policy.

Second, asset owners have the option of managing their assets internally and / or outsourcing to external managers. On the one hand, by managing their assets internally and having internal investment capabilities, asset owners can evolve their own investment beliefs and make investment decisions that will significantly impact their portfolio's GHG emissions. On the other hand, asset owners which outsource most of their investment decisions need to primarily engage with their external managers to influence their portfolio's carbon footprint. To be able to exert this degree of influence and engagement, it is important to underline that it makes sense to have the internal capability to choose and work with external managers. Indeed, this approach gives asset owners more control and keeps external managers close to the issues that asset owners are trying to solve, including their portfolio's GHG emissions and more generally their climate change positioning. Section 5 of this report will specifically cover the topic of external management.

Third, asset class allocation affords asset owners and managers different levers in terms of net zero pathway. Fixed-income investors may have the option of investing in green or ESG related bonds, but they have no shareholder right and more limited engagement options. As the asset allocation of a typical insurance company is heavily weighted towards high quality fixed income securities and debt investments, its pathway to net-zero may be very different from that of an equity investor which has a variety of engagement options.

Finally, asset managers and owners may choose different modes of investment (public or private, direct or through funds) to reflect their investment objectives and internal capacity. These choices will influence the levers at their disposal to enact a net zero pathway. Indeed, if an investor decides to allocate a significant part of its assets to public equity markets, it will be able to buy and sell shares of integrated power utilities and companies operating in the energy, materials and transportation sectors because a large universe of these companies are listed on the stock exchanges. However, it will be much more difficult for that investor to invest in pure renewable power farms and green solutions as most of the companies involved in these two sectors are private (unlisted) companies. As a result, this type of asset owner / manager can impact GHG emissions with its investments in a large but limited number of sectors.

	Companies		Projects - Bespoke private	Funds
	Public	Large Private		
Hydrocarbon Exploration and Production	●	●	●	●
Materials	●	◐	◐	●
Transportation	●	◐	○	●
Power Generation				
Integrated Power Utilities	●	◐	○	●
Renewable power farms	◐	◐	●	●
Distributed Power / Batteries	◐	◐	●	●
Real Estate	◐	●	●	●
Green solutions	◐	◐	●	●
Other Sectors	●	●	◐	●

Figure 2: Asset classes and investment styles affect access to investment opportunities that significantly influence GHG emissions

## CONCLUSION

All asset owners and managers have several avenues to explore in order to manage and reduce their portfolio's GHG emissions. Thus, all asset owners and managers do not have the same leverage as their characteristics, their investment styles and factors differ from one asset owner/manager to another. By better understanding their asset allocation in terms of sector and geography and by defining their characteristics and their investment styles and factors as a preliminary step, asset owners and managers get an idea of their internal room for maneuver and allow them to identify what they could do in order to increase their influence and implement a net-zero pathway with their portfolio.

# INVESTMENT BELIEFS

---

## INVESTMENT BELIEFS: A FOUNDATION FOR ASSET MANAGERS AND OWNERS

Investment beliefs are not a checklist to be applied to every decision. They are a guide for making decisions that often require balancing multiple, interrelated decision factors. They serve as a foundation for setting and carrying out strategies to accomplish long-term goals and mitigate risks.

They provide context for asset manager and asset owner actions, reflect their values, and acknowledge their responsibility to their clients and beneficiaries. Ultimately, investment beliefs serve as the foundation for investment policy, strategy, and decision making.

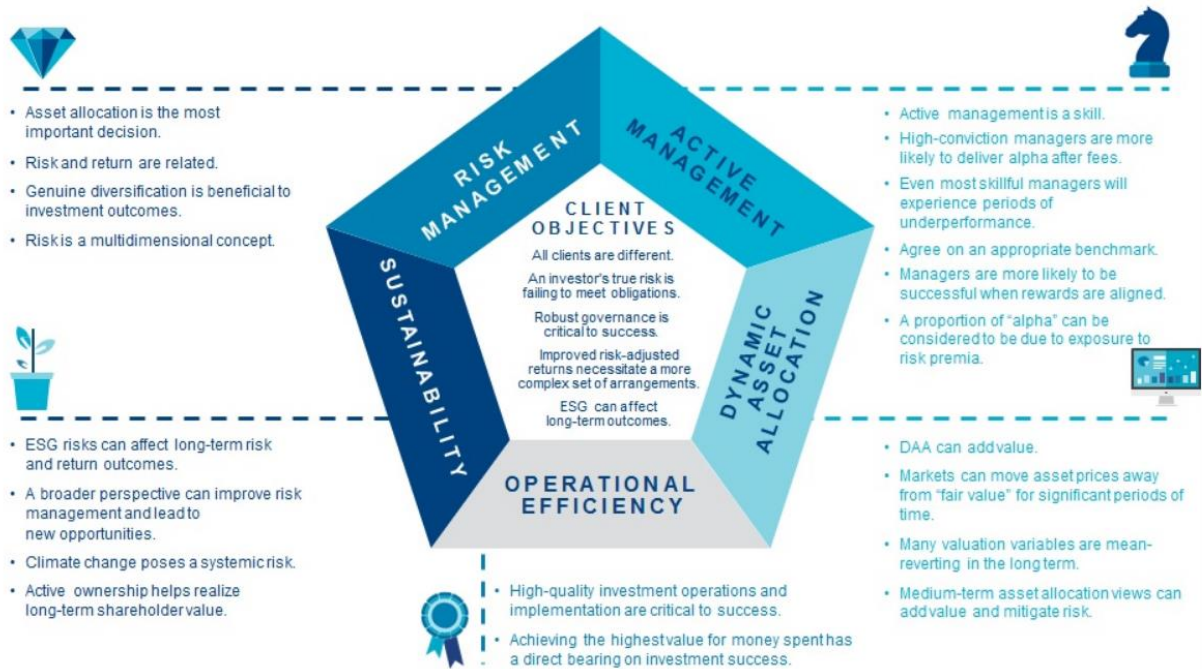
Having a set of beliefs is beneficial to asset managers and asset owners as it allows these organizations to further develop governance models and implementation strategies to accomplish their individual missions.

Though each organization has its own unique mission and individualized investment beliefs, it is common to see shared beliefs across asset managers and owners. Climate change is one area of focus that can be seen across many organizations' investment beliefs.

Several examples of investment beliefs can be found by visiting the websites of the organizations that helped develop this report. An example that can be applicable to asset managers and asset owners is shown in the Mercer graphic below.

## MERCER INVESTMENTS BELIEFS

EFFECTIVE INVESTMENT STRATEGY COMES DOWN TO SMART THINKING



## CLIMATE CHANGE BELIEFS

Over recent years, it has become clear that climate change is an urgent threat to society and that climate-related transition and physical risks pose a significant threat to investors' abilities to accomplish their mission. At the same time, many investors share the view that transition to a low-carbon economy can provide investors with significant investment opportunities that can provide desirable risk-adjusted rates of return.

These views have been seen not only in the actions that investors are taking, but also in investment beliefs and policies. At a high level these views may be more commonly shared, but beliefs related to climate change can also become much more nuanced.

It is important for organizations to become educated on the complex issues and implications of climate change to adequately develop their own house views and climate change specific beliefs.



When developing these house views, there are several climate-related questions that organizations should be asking themselves. These include:

- **How will climate change impact the economy?**
  - To what degree will certain economies be affected more or less than others?
- **What are the physical and transition risks for sectors and companies?**
  - How do these differ between different sectors and companies?
  - How does this translate into changes in performance?
- **How does the impact of climate change occur over time?**
  - Are there short-term, mid-term, and long-term assessments?

## GOVERNANCE IN IMPLEMENTATION

The development of investment beliefs is typically conducted by investment board of directors or senior staff such as the chief executive officer or chief investment officer.

It is imperative for these individuals to understand the implications of setting investment beliefs, including climate-related investment beliefs, as these influence investment policy, strategy, and decision making.

It is important for key decision makers to communicate these beliefs to their team, as well as the rationale behind these beliefs, and how they could translate to operational decision making.

Leadership instills a culture that will dictate how effective investment beliefs are and the degree to which the organization benefits from them. Adoption and integration must come from the top in order to be broadly adopted. The actions surrounding investment beliefs, and in particular those that are climate-related one, will influence investment strategy execution and will limit or expand the tools to which the team has access to accomplish their goals.

Governance between asset managers and asset owners also plays an important role. In this case, clear communication between both parties on the goals, expectations, and processes is vital. Asset owners need to have a strong understanding of the processes that their asset

managers have and hold them accountable to the agreed upon terms. Asset managers that understand the investment beliefs of their clients, and have a well-defined process to integrate climate change into their investment management strategies and portfolios, should stand in an advantageous position to mitigate risk, capture opportunity, and provide value to their clients.

## NET ZERO ACTION LEVERS

When climate-related investment beliefs are identified and the proper policies, strategy, and tools are provided, it will empower the team to make decisions that will lower risk and enhance investment returns. These tools can be opportunities, but without them, the team and, ultimately, the investment portfolio or fund may be left more exposed to climate-change.

Asset managers and owners vary in size and complexity and have their own goals and core competencies. With these differences come options in the levers that can be utilized. Though there is not a one-size fits all answer as to how to manage assets while incorporating climate-change, there are varying levers that should be considered to help an asset manager or owner choose how to decarbonize. Each of these levers listed below may affect the risk or return portfolio of an investment portfolio or fund to emphasize that these should be tied back to the investment beliefs and the mission of the organization.

Is the goal of the asset manager or asset owner to decarbonize their portfolio or to decarbonize the real economy?

## KEY CONSIDERATIONS

Individual portfolios can be developed that have lower carbon emissions exposure than their benchmarks or the real economy, but these individual portfolios may not change the emission profile of the real economy. Investment beliefs and investment strategy can steer investors towards one of these paths.

To what degree can investment allocation shift capital to or from climate-related risks and opportunities?

#### KEY CONSIDERATIONS

- How is asset allocation determined across asset classes? How are investments allocated within an asset class or within a specific strategy or portfolio?
- Can investments be allocated to active strategies or only passive strategies? Is there discretion on what benchmark is used?
- Where does investment due diligence and discretion exist? Can investments be made directly, internally, through funds, or externally?

Is there a proactive approach to invest in climate solutions and low-carbon investments? Are investments in certain high-emitting sectors or companies allowed or prohibited?

#### KEY CONSIDERATIONS

- Is climate change viewed as both a risk and an investment opportunity?

To what degree does the asset manager or asset owner use engagement as a tool to help decarbonize their portfolio and the real economy?

#### KEY CONSIDERATIONS

- Do they engage corporates, policymakers, and regulators?
- Do passive managers and asset owners still deploy active engagement strategies?
- Do asset owners engage or collaborate with asset managers to influence their procedures, processes, and climate-change integration?
- Is engagement utilized from all asset classes or only from public equities?

With climate-change integral to the success of asset managers and owners accomplishing their mission and goals, it is important to consider adopting climate change investment beliefs to adequately instill a foundation that influences senior leaders, strategy, and policy, and provides the team the levers to help decarbonize individual portfolios and the real economy.

# RISK APPETITE STATEMENT

---

## BACKGROUND

An important element of a Risk Appetite Statement for an asset owner/manager is the level of acceptable investment risk. This is often expressed in the form of investment constraints which inform asset allocation decisions. Constraints may be expressed in relation to total risk, active risk and liquidity risk. In the context of asset allocation, traditional risk measures in both total and active terms are usually formed with a strong reliance on historical market data. This market data informs the asset allocator as to the risk and return of an asset class and how correlated it is with other asset classes. Past crises are often used as particularly informative events to understand the downside risk that any given asset class may exhibit. Informed by this and taking into account a fund's risk appetite and any other relevant constraints, asset allocation decisions are made and periodically reviewed.

While asset allocation guides the overall structure of the portfolio, portfolio managers are required to make asset selection decisions in order to build the actual portfolio. Climate change presents challenges to this well-established approach of asset allocation. Quite simply, the market data that many asset allocation models use may understate risks, given the systemic threat climate change implies.

Even for those markets where we have several hundred years worth of data, risks similar to those posed by climate change are unlikely to be reflected in these datasets. So the long run (or equilibrium) relationships in the historical data are unlikely to be the same ones that we see in the future. Moreover, we may not even be in any kind of equilibrium for the foreseeable future as we transition from a carbon-based economy toward a green economy. In such a world, this presents challenges in the modelling of expected returns, volatilities and correlations between asset classes.

Focusing on returns, in equilibrium it can be argued that 'brown assets' are expected to outperform 'green assets' due to being riskier (i.e., more prone to climate risk). However, during transition green assets may get repriced up and brown assets repriced down, perhaps unexpectedly, as some companies move to mitigate the effects of climate change faster than others. Recent studies, both theoretical (Pastor et al., 2020) and empirical (Gorgen et al., 2020),

have carefully teased out the different forces at work and show that the positive risk premium to brown securities has largely been offset by the negative return due to being repriced down as low carbon assets have unexpectedly lowered their carbon exposures even further. The fact remains, however, that the net balance of these two opposing forces remains unclear, making asset allocation decisions that much more difficult in a world subject to climate change.

## TIME HORIZON OF CLIMATE CHANGE

Climate change has an inherent temporal dimension. Some risks and opportunities could manifest in a short space of time while others will take far longer. This is an additional source of uncertainty.

It is helpful to consider these risks in two categories – ***physical*** and ***transition***. The impacts from both categories are likely to be far reaching.

Some of the ***physical impacts*** of climate change are likely already being felt. These are expected to worsen over the course of many decades even under the best-hoped for climate outcomes. From an investors perspective, examples of the risks include shortened lifetimes of some tangible assets for example due to coastal flooding, physical damages to real assets (e.g., agriculture, timber, infrastructure and real estate) and lowered productivity growth in certain regions as a result of heat stress.

These trends will take many years to play out thus having a keen understanding of the associated timeframes is important.

Many of the ***transition risks*** could eventuate far faster. The potent combination of technology, policy and shifting consumer preferences can result in severe disruption to high emissions sectors. Whole industries and sectors face widespread disruption as new technologies replace existing unsustainable ones. Some assets, such as fossil fuel reserves, may become 'stranded', rendered uneconomic by proper pricing of the carbon pollution externality, made obsolete by new technologies or face a dwindling consumer market.

Conversely, companies on the right side of climate policy and the transition may benefit. For example, renewables firms may profit from higher electricity prices as fossil fuel plants reduce their production.



Investors also need to consider the unpredictability of policy initiatives. A coherent, global policy response is unlikely despite the growing momentum that has developed since the Paris Agreement. Instead, industries may be at risk from a patchwork of unpredictable and potentially heavy-handed regulatory interventions. Policies may not be well co-ordinated across countries, further raising the cost of doing business.

The impact of climate change on asset classes and investment returns is uncertain in both magnitude and timing.

## ADJUST RISK METRICS AND TOLERANCE

It is difficult to determine the exact impact climate change will have on each asset, but indicators like carbon intensity and geographical location give an indication of the risk an asset is likely to face. Financial data providers are beginning to develop tools for measuring this risk, both for individual companies and for investment portfolios. Further, funds are developing methodologies for assessing the impact of climate change on a company-by-company basis. Armed with improving knowledge of the risks and opportunities that climate change poses to portfolios, the challenge for the asset allocator is what to do with it.

There are several approaches that can be considered:

### APPROACH #1

Make adjustments to risk and return assumptions at an asset class or perhaps even sector level. This could be either via internal modelling or commissioning of third parties with specialist expertise in incorporating climate change into asset class/sectors. At its simplest level, this could be using metrics that are believed to be correlated to climate change risk such as carbon intensity. The risk assessment for those assets which are expected to be positively oriented in the context of climate change could be lessened whilst the risk measurement for negatively oriented assets could be elevated. The expected result would be a **structural tilt** (i.e. at the Strategic Asset Allocation (SAA) level) towards 'green' investments. An important consideration with this approach is that there may be unintended consequences. Some industries e.g. cement and steel, are necessary in a transition towards net zero yet have very high carbon footprints. Adjustments may be needed to take this into account.

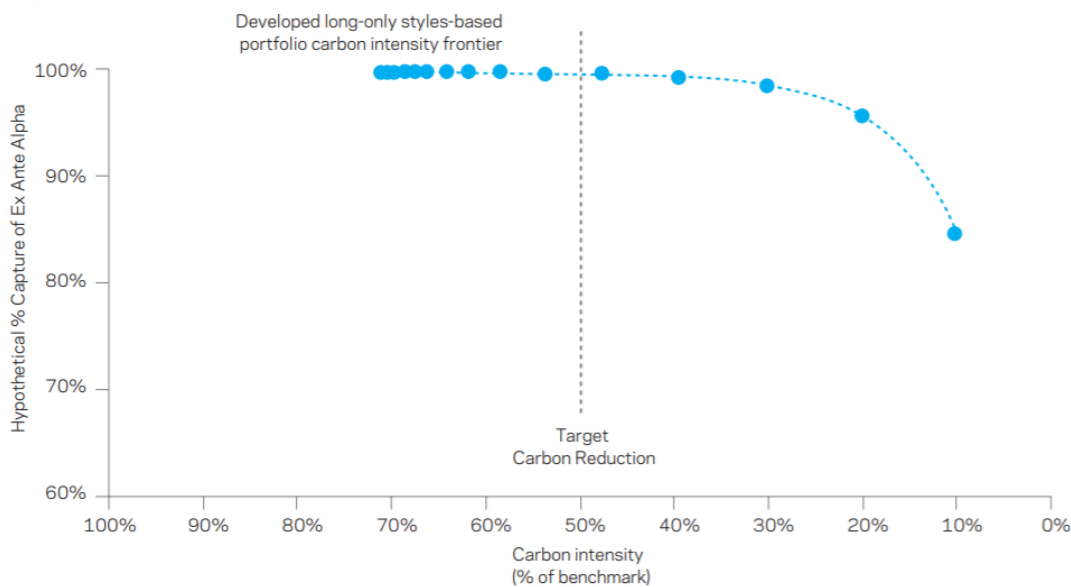
## APPROACH #2

Allocate more **total and/or active risk** to those areas that defend against the long-term negative externalities. This is essentially an equivalent approach to that above since asset classes that have more favourable return/risk characteristics will naturally be assigned more risk in an optimised portfolio.

For these first two approaches there are some important considerations: first, excluding companies that will suffer the most from climate change, or increasing exposure to companies that may benefit will introduce **concentration risk** into their portfolio (see chart below). Up to a point, the increased risk is likely to be small. However, after a point, it is likely to increase rapidly. The second is giving consideration to how much climate risk is already priced into assets given there is evidence that **some** repricing has already occurred.

### Hypothetical ESG-efficient frontier for carbon-aware portfolio<sup>18</sup>

Carbon Ownership vs. Hypothetical Expected Excess Return Of Low-Carbon Developed Long-Only Styles-Based Portfolio



Sources: AQR, MSCI, and Trucost. Notes: The figure shows portfolio carbon intensity on the horizontal axis and expected (ex ante) returns on the vertical axis, as a fraction of the expected returns of carbon-agnostic portfolio. For illustrative purposes only and not representative of an actual portfolio AQR manages. Backtest is gross of fees and gross of transaction costs. Please see appendix for backtest construction methodology and data. Hypothetical data has inherent limitations, some of which are disclosed in the appendix.

### APPROACH #3

Directly introduce additional climate-related objectives into the portfolio optimisation problem. For example, maximising some combination of the portfolio's risk-adjusted return and ESG score.

### APPROACH #4

Construct a portfolio that aligns with exogenously determined targets or goals such as 'net zero 2050'. In this approach, climate change considerations are incorporated as a constraint rather than an objective.

## ENSURE THAT YOU TAKE VARIOUS SCENARIOS INTO CONSIDERATION

Scenarios are particularly useful in application when dealing with highly uncertain outcomes. Climate change presents such a challenge with a broad range of quite plausible trajectories reflecting the interplay between policy and new technology adoption and also the physical impact of global warming. Therefore, including climate scenarios in asset class / sector forecasts and the respective sensitivity analysis is an important tool to enhance understanding of the potential magnitude of the risks.

It is advised that at least three scenarios are applied, representing a central case, bookended by high and low cases. There are choices to be made on the type of scenarios developed, be it emissions pathways (e.g. 1.5C, 2C, 3C) or some form of future states described primarily by policy and technology advancement.

Regardless of the approach adopted, a specified central case scenario reflects a view, based on the information currently available, of the way that climate change is most likely to play out. If climate change presents a material risk to an asset, the characteristics of the central case scenario should be reflected in the valuation of that asset.

The other scenarios fulfil an equally important role in testing the robustness of investments to different climate change outcomes. Such sensitivity analysis is important since the paths that each country, technology and the climate takes are still highly uncertain. It is perhaps useful to think of the central scenario as the midpoint, and slightly more probable out of a range of plausible outcomes. Thus, investment professionals should assess the robustness of their valuations to climate change outcomes by considering all defined scenarios, not just the central case.

The details of such scenarios are likely to include assumptions around carbon pricing, physical impacts, energy prices, economic growth and various technology penetration rates to name just a few. The result of scenario analysis should be an enhanced understanding of the sensitivity of an asset / asset class to climate change.

# INCENTIVES

---

## BACKGROUND

A set of well-designed incentives can help reinforce the change you want to occur and provide leverage to encourage the desired change to happen more quickly and or more successfully. As with any incentive structure there are several issues to consider, including what you are trying to achieve, how and where you exert influence and the types of reward you offer. If you invest through an internal team in active strategies, where and how you can exert influence will be very different to if you are investing via external managers using index tracking mandates. This chapter offers some examples of best practice and the types of questions you might want to consider.

## CLARITY OF OBJECTIVES

For an incentive to be effective all parties to the contract need to understand what is expected of them. Common understanding can be built by:

- Articulating what a good outcome would look like and what a disappointing or unacceptable outcome would look like. This helps to identify and eliminate areas of ambiguity and misunderstanding.
- Setting out the scope covered by the incentive – is it something you expect to be consistently delivered throughout the portfolio or firm or are there some areas which are considered higher risk which should be the focus of attention?
- Setting a time frame for delivery – this might be a single end goal eg net zero by 2050 or you may want to consider setting milestones along the journey to track progression.

## SELECTION OF METRICS

Having established our objectives, the next question is how are we going to track and assess their delivery? The choices made at this stage can be pivotal to how successful the project is – there are many examples from the world of executive remuneration where metrics selected with

the best intentions have driven undesirable behaviours. Some of the key principles to consider are:

- **ALIGNMENT**

Is the metric aligned to the objectives you have set? Once established delivering the metric becomes the main focus of activity (as successful delivery earns a reward) and the real objective tends to be forgotten.

- **CONTROL**

Can the metric be controlled? If the metric selected cannot be influenced by changing actions or behaviours it will be an ineffective incentive and will probably be viewed as unfair. Setting an unfair objective can be very damaging to trust and organisation culture.

- **MEASUREMENT**

Can the metric be objectively measured? This will not always be possible, particularly if you are trying to encourage a cultural change in behaviour associated with the implementation of the investment process. Qualitative metrics may be preferable to a poorly aligned quantitative metric in the long term.

- **TIME HORIZON**

How frequently can the metric be observed and how quickly is it realistic to expect to see a change in the metric? For example, carbon data is usually only updated annually so looking for a change in company emissions on a quarterly basis is nonsensical.

Even if you have followed best practice in selecting aligned, controllable, measurable metrics you need to be alert for unintended consequences from your selections. For example, two asset owners might have the same objective to reduce the carbon footprint in their portfolio. One is only interested in seeing their portfolio emissions fall and is happy using a divestment strategy, the other would like to encourage their investee companies to change their business practices to reduce their impact on the environment. Selecting a portfolio intensity metric would allow both asset owners to track progression towards their objective however it could encourage managers investing on behalf of the second asset owner to divest high emissions companies rather than engage with them to secure lasting change. To avoid this the second asset owner might want to consider adding additional metrics to track the number and success of corporate engagements or a like-for-like carbon intensity metric which eliminates the impact of changes in portfolio composition.



## REWARDS

Rewards can take the form of tangible or non-tangible benefits. Tangible benefits include financial rewards such as bonus payments or performance related fees but can also include career progression for asset owners with an internal investment team. Non-tangible benefits include providing references for external managers and media pieces to highlight their contribution. Internal teams could consider recognition in staff townhalls and newsletters as well as crediting individual contributions in more formal reports to investment committees and boards.

Quantum of reward is a difficult topic and will vary widely depending on the individual context. At a basic level the reward needs to be of sufficient value to the recipient that they are incentivised to change their normal behaviour to secure it. Setting the level to low may fail to motivate; setting it to high might encourage attempts to “game the system” or fail to deliver a lasting change.

## CONCLUSION

Addressing climate change through investment portfolios requires a sustained change in investment approach which becomes “the new normal”. Well-designed incentives can encourage that change to take place; poorly designed ones may do more harm than good. Spending time at the outset articulating what you are trying to achieve, identifying metrics aligned with those objectives and establishing a common understanding between the asset owner and their agent, be that an internal investment team or an external manager increases the probability of a successful and sustainable outcome. Incentives do not have to be financial they simply need to be valuable to the recipient. Alignment is probably the single most important consideration as once set, delivering the metric becomes the manager’s goal rather than the delivery of the asset owner’s true objective.

# EXTERNAL MANAGERS

---

## BACKGROUND

Asset management is a vast industry. As of September 2021, there were over 3,200 investment management firms offering over 20,000 investment products listed in the eVestment database. This includes over 1,600 products listed as passive, approximately 14,500 listed as active, and the remaining falling somewhere in between. These products are categorized into six distinct asset classes—equity, fixed income, hedge funds, alternatives, real estate, and multi-asset. Within each asset class, products can be distinguished by characteristics such as region of focus, investment process, investment style and targeted market cap. In addition to these classifications, external investment managers may also set additional objectives such as responsible investing emphasis, including ESG integration, impact investing and sustainability themes.

With so many options, Asset Owners can carefully consider which products have the characteristics that complement their existing portfolio and align with the mission and values of the organization. In some cases, it may be determined that there is no perfect fit. In the public space, Asset Owners, with the capacity to meet higher minimum investment thresholds, can invest in a separate account vehicle. This would allow them to specify bespoke adjustments to the process, to better align the portfolio characteristics to meet their needs. Mutual funds, ETF's, and commingled accounts are other ways to access a public investment strategy, but these are relatively standardized investment vehicles with little to no flexibility for customization. Although private equity funds are accessed through a limited partnership which does not allow for customization, the targeted objectives of these strategies make them popular options for institutional investors that are pursuing a unique theme. Regardless of the vehicle used, it is essential for Asset Owners to clearly communicate the investment mandate and objective to External Managers via the contract.

Once an Asset Owner has identified the desired characteristics that complement their existing portfolio, due diligence can then be conducted on the products that meet these qualifications. Due diligence includes a comprehensive examination of the organization, the people, the process, and the investment philosophy. Historical performance is reviewed to confirm that the strategy has performed in line with expectations given the philosophy and process. Once the

most suitable External Manager is hired, the Asset Owner should implement ongoing monitoring to confirm the strategy is being managed according to the agreed-upon guidelines.

## ASSET OWNER OBJECTIVES

The External Manager's job is to beat or match the market depending on style (alpha and beta). Asset Managers analyze External Manager's past performance to determine if they can meet the Asset Manager's performance objectives going forward. Aside from returns, it is important for Asset Managers to look at risk-adjusted returns. If the External Managers returns are from excessive risk-taking, then this strategy would fail during a market downturn. Other important risk measures are Information Ratio, to determine if the External Manager was paid for the risk they took, Batting Average to determine percentage of success, and Standard Deviation or Beta to see how risky the strategy is compared to the index.

The External Manager's process for assessing risk and return for the various investment opportunities is critical. People, process and investment philosophy drive the results. Experienced portfolio management teams that have developed a strong investment process and philosophy will evaluate the long-term fundamental value of each asset they buy, ensuring the debt or equity issuance will succeed during any market cycle. They must factor in all risk factors that could impact a company's profitability on a going forward basis.

The key to External Manager selection is due diligence and understanding the external firm or product. Do your homework and consider all options. An Asset Owner must conduct thorough due diligence. This should include interviewing the portfolio management team and credit analysts and onsite visits to observe how the firm operates. Key questions to consider include:

- How stable is the firm and portfolio management team?
- Was growth organic or due to mergers and acquisitions?
- Has the portfolio management team worked together for a long time?
- How consistent is the team's performance during various economic cycles?
- What experience/education does each team member have? Also what experience does the team have in ESG and sustainable investing?
- How diverse is the staff?

- Do you have a clear understanding of the External Manager's investment philosophy and process? Additionally, the way they integrate climate change and carbon exposure into their portfolio analysis?
- How are investment ideas formulated? Do they incorporate consideration of climate change impact.
- Ultimately, who makes the portfolio construction decisions?
- In what market conditions would this strategy outperform the index?
- What type of research, systems or models does the firm use? What research and systems do they use to measure carbon and climate impacts?
- What risk management system does the firm utilize and if that system incorporates climate change?
- What is the firm's operational risk framework?
- What advantage does this firm have over its competitors e.g., size, deep research teams, deal sourcing capabilities, ESG, and specifically climate change exposure, etc.

Lastly, Asset owners should do robust peer analysis is key to selecting the best manager and compare and contrast External Managers climate change research and disclosure.

External Managers, depending upon the level of active management, can and should be expected to evaluate risks such as climate change within their time horizon. Asset Owners should hire External Managers that are best in class and thought leaders in the climate change space. As climate change and its devastating impact on society continues to compound and affect our future generations, it is crucial that External Managers commit to becoming champions of a net zero universe. The External Managers need to develop a plan to reduce their carbon footprint and encourage others to do the same.

## INCORPORATE NET ZERO INTO THE INVESTMENT PROCESS

To access the benefits of diversification, many large Asset Owners invest in both passively and in a range of differentiated actively managed strategies. This results in a total portfolio exposed to much of the investable universe and significant exposure to the overall economy. As extreme weather events become a normal occurrence, the destruction that climate change can cause to the economy is becoming clear. These events could lead to expenses such as increased input costs and higher insurance premiums, which would impair company returns. Additionally, External Managers cannot ignore the risks climate change may pose on certain company investments. Examples include destruction to real estate in flood or extreme weather zones. Given the macro and company-specific risks associated with climate change, long-term investors confronted with it, and the dramatic global change in energy sources, must factor that into their investment process and mandates with External Managers.

Investment strategies are shaped by the combined insights and experiences of members of the investment team. As a result, there are no two products that are exactly alike. Investment managers that outperform the benchmark over the long term have developed a philosophy and process that is differentiated from industry peers. This unique perspective also applies to how the manager incorporates sustainability and climate change into their investment analysis. Since corporations are not required to report environmental impact data, External Managers are left to develop a thesis using indirect measures. Given there is no industry-wide standardized framework, Asset Owners must assess whether an External Manager appropriately includes climate change in their risk analysis through the due diligence process.

As government policy makers and regulators explore strategies to reduce the impact of future climate pollution, one could anticipate increased progress around corporate transparency. Additionally, investment managers can play a critical and active role in demanding more and improved reporting from corporate entities in which they invest. External Managers, in any asset class, should be expected to enhance their climate risk assessments as data and information become more available and standardized.

## NET ZERO TARGETS

Asset Owners that have adopted a Net Zero emissions target must decide how to push those goals out to their External Managers. Depending upon the amount of tracking error they are willing to accept against traditional asset class benchmarks, the Asset Owner can implement their target in several ways. First, they can set explicit carbon emissions and carbon intensity

budgets for their External Managers using various measurement tools for scope 1 and 2 emissions and eventually scope 3 emissions. The Asset Owners need to determine the 'penalty' and remedy if these managers miss the target. Plus, the Asset Owners need to balance the net performance objective and the carbon budgets impact on that performance. It is anticipated that Index providers will be able to generate Benchmarks at set carbon limits.

Second, the Asset Owner can also select specific mandates and managers that focus on climate solution investments and mitigation efforts, or mandates with hard carbon budgets. These can complement the traditional index / beta investment within a portfolio. At present climate solution investments are more likely to be found in private market investments, but over time may emerge within the public markets.

The major challenge for Asset Owners will be if the global economy is not reducing its net greenhouse gasses as quickly as the Asset Owner's objectives. At that point, the Asset Owners will need to decide if it can afford the active risk to reduce its portfolio emissions through its asset allocation. While the Fund might hit its carbon target if the rest of the world does not follow through, it will incur more and more tracking error, both positive and negative and sadly the cost to the world to slow climate change will likely grow exponentially.

Quantitative External Managers with very rigid screening products may find it very difficult to integrate carbon intensity into their formulas, until there is more consistent and comparable reporting by public and private companies. However, the Asset Owners can still require specific carbon limits within its mandate. By doing so the Asset Owner will be overriding the External Managers process and will need to compare the performance against an adjusted benchmark to determine the External Managers value added.

## NET ZERO OBJECTIVE

Some External Managers in both public and private markets focus on sustainable investments and specifically climate change risk and opportunities. Those External Managers are setting industry best practice standards in carbon due diligence and ESG research. As of September 2021, there were 153 External Managers that factor in carbon intensity/awareness in their investment process listed in the eVestment database. However, the asset management industry is made up of 3,287 External Managers, these carbon-aware managers only represent 4.65% of the universe.

Sadly, the vast majority of External Investment Managers only embrace ESG as a specific side product or a small research data point. It is vital for Asset Owners to detail their Net Zero



Objective and work on a solution with External Managers to accomplish it. Most External Managers will need clear guidance from the Asset Owner for carbon budget and carbon intensity portfolio measures. Specific targets and limits need to be established in the Investment Manager Agreement or Partnership documents.

## REPORTING

While the Asset Owners need to be clear in their carbon budget and Net Zero goals, conversely, it is going to be imperative that external investment managers report their carbon exposure and intensity to their clients. External managers, especially in the private markets need to improve their measurement and reporting their carbon exposure and carbon intensity to their clients. It can not be dependent upon the Asset Owner to measure the accounts exposure, especially for commingled products, it is the investment managers responsibility to measure and report out to investors. External Managers, just like Asset Owners, will need to push the reporting by companies, both public and private to enable proper measurement of Scope, 1, 2 and eventually, Scope 3 emissions. This is especially true for private market holdings where adoption of TCFD and other reporting frameworks has been particularly slow. The External managers in private assets must require better monitoring and reporting from their portfolio companies and holdings, and they report that data and trends to their Limited Partners and clients. External Managers should team up with Asset Owners to help engage and push their underlying holdings to develop active plans to reduce emissions over the coming decade and join the race to Net Zero.

## COLLABORATION

Beyond the traditional External Manager structures, Asset Owners should consider alternative structures where they collaborate with External Manager and/or with peers to create products and partnerships that redefine the marketplace. The energy transition will demand an enormous amount of capital. These new investment opportunities provide an opportunity to expand the External Manager structure beyond the typical styles of separate accounts, commingled products, and exchange listed funds. Larger Asset Owners should seek opportunities to pair up with External Managers to launch new products and collaborate with peers to develop their own transactions. There are already several examples in the marketplace of Asset Owners teaming together to create partnerships or develop and own third party External Managers. There are also recent examples of Asset Owners helping External Managers create and launch new products to aid in the transition. Many of these involve innovative structures that allow the Asset Owners to participate in the product and External Manager success.

Humankind is faced with one of the greatest transitions since the Industrial Revolution. This energy revolution will likely be highly disruptive to companies, investors, and communities that are slow to adapt and change. As mentioned, the amount of capital needed is enormous. So, if ever there was a time to work together and join forces, this is it. External Managers need to work with, rather than just sell to, Asset Owners. There needs to be more collaboration and reduced costs to fund this bold new future.

## EXTERNAL MANAGERS INCENTIVES

Incentives are also a powerful tool to motivate and guide External Managers. Asset Owners should consider carbon budget incentives in their performance goals and even in the External Managers incentive fee structure. If positive Alpha is generated but at a cost detrimental to the Asset Owners carbon exposure goals, the External managers should see their incentive fee and possibly even their base fee reduced. This could be especially useful in private market assets given the long-term nature, direct ownership structures, and relatively high-performance fees / profit sharing structures. Tight alignment of the Asset Owners carbon reduction goals with all their External managers is critical for long-term success.

# CONTACTS

---

**For more information about the SMI, visit**

**[www.sustainable-markets.org](http://www.sustainable-markets.org)**

**For enquiries, contact**

**[info@sustainable-markets.org](mailto:info@sustainable-markets.org)**

