MSCI ESG Research LLC

Breaking Down Real Estate Net-Zero Targets

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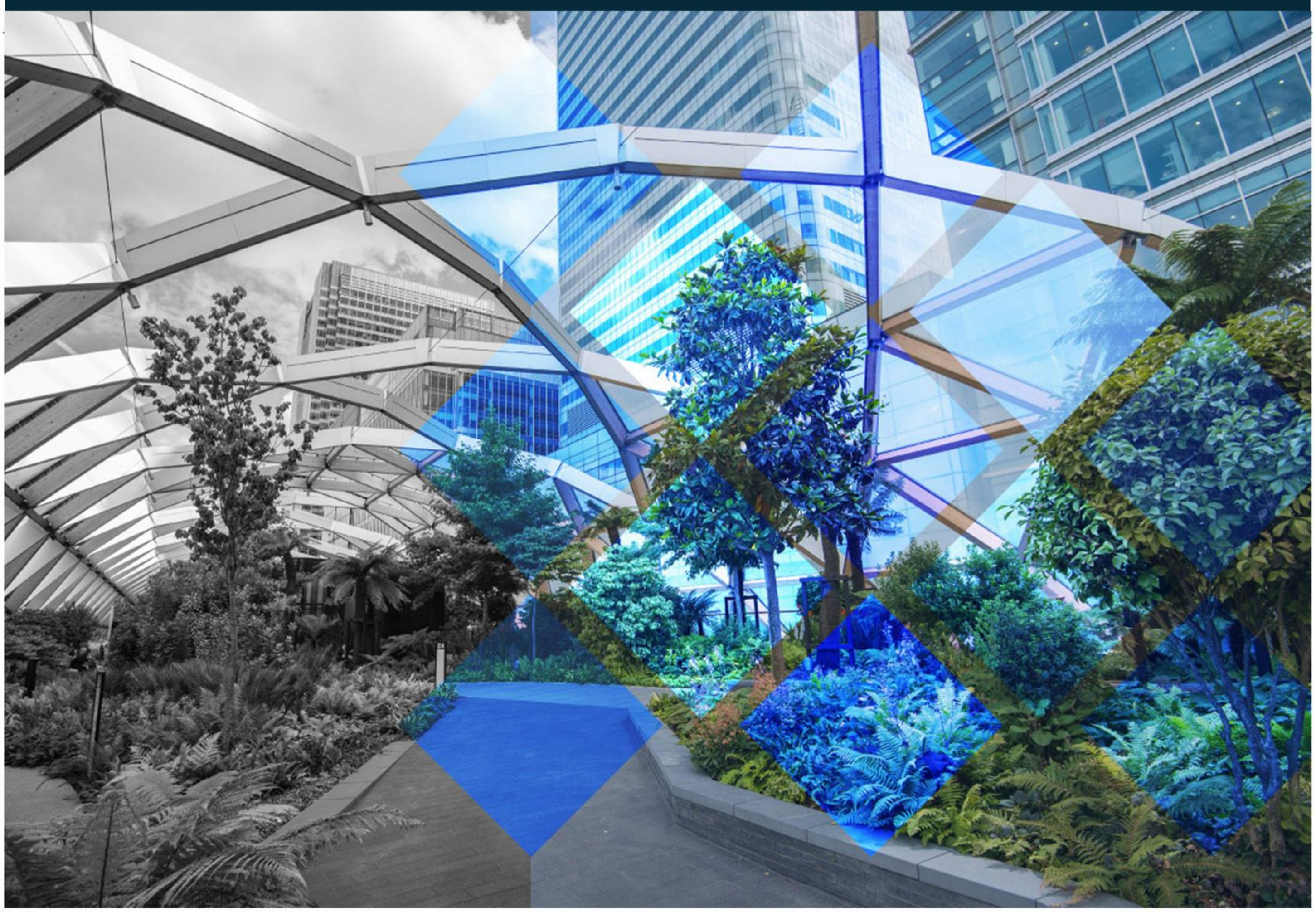

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Executive summary

To meet the global objective to address climate change, leading real estate funds and companies around the world are setting decarbonization and "net-zero" targets. However, these targets can differ widely. There are many elements that comprise a net-zero target, hence some targets can be more credible than others.

In this report, we outline an approach to evaluate real estate funds' and companies' decarbonization and net-zero commitments and targets. The goal is to help our clients and the wider industry set comprehensive, ambitious and feasible net-zero commitments. Our approach also supports asset owners in evaluating decarbonization targets of companies and funds they invest in.

This report builds on our net-zero report for corporations, "Breaking Down Corporate Net-Zero Climate Targets," (Watanabe and Panagiotopoulos 2021) and outlines that to support global climate goals, best practice decarbonization and net-zero targets are:

- **Comprehensive:** Include all significant sources of emissions, even those that may be hard to quantify, including Scope 3 emissions from tenant-controlled energy use and development activities
- **Ambitious:** Pursue absolute reductions in the short and long term, in line with accepted, science-based pathways
- **Feasible:** Demonstrate progress toward goals and supported by a robust business strategy

To test the approach, we piloted it on the 16 constituents of the MSCI Pan-European Quarterly Property Fund Index (Unfrozen) (PEPFI). The pilot was informed by both self-reported and publicly available data. All the PEPFI funds have set decarbonization or net-zero targets. However, among the targets, there is a spectrum of maturity:

- All targets cover direct (Scopes 1 and 2) emissions and most (81%) include emissions from tenant-controlled energy, but only 57% of targets include emissions associated with developments (Scope 3).
- Of the PEPFI targets, 88% are net-zero commitments — indicating long-term absolute reductions in line with global goals — but only 63% have interim targets.
- The majority of targets have an accompanying strategy, and many include initiatives to reduce emissions; all companies have an opportunity to make their strategies more robust.

Introduction

In the global transition to a low-carbon economy, real estate owners and managers have a huge task ahead. In 2019, greenhouse gas (GHG) emissions from the operation of buildings surged to the highest level yet, at around 10 gigatons of CO2, or 28% of total global energy-related GHG emissions.[1] We estimate that to remain aligned with a 1.5°C global warming pathway, as laid out in the Paris Agreement, property assets may need to reduce their operational carbon emissions 80% by 2034.[2] This reduction may have significant financial implications for real estate assets.

To meet the challenge of decarbonization, real estate funds and companies are setting net-zero emissions targets that aim to bring GHG emissions to zero on a net basis. In practice, most companies cannot operate without emitting at least some GHG. Hence, there is usually a need to compensate for residual emissions via carbon offsets or carbon removal. Achieving net-zero requires emissions to be reduced in line with science-based scenarios, and with offsets or removals used only after all other options for decarbonization have been exhausted.

For the last several years, the real estate industry has been mobilizing to address these challenges and to capitalize on opportunities related to net-zero. The industry now has more emissions-reductions targets and net-zero commitment frameworks:

- Forty-four real estate companies worldwide had set a target aligned with the 1.5°C pathway through the Science Based Targets initiative (SBTi), with an additional 66 having committed or set a 2°C or lower target, as of November 2021.[3]
- The Urban Land Institute (ULI) Greenprint Center for Building Performance's net-zero carbon operations goal had commitments from 25 companies, representing over USD 917 billion in assets under management (AUM), 1.7 billion square feet (161 million square meters) and 6,700 properties across 20 countries, as of October 2021.[4]
- The Better Buildings Partnership's Climate Commitment — which requires signatories to publish net-zero carbon pathways and delivery plans — had 27

[1] "2020 Global status Report for Buildings and Construction." Global Alliance for Building Construction, 2020.

[2] Robson, Will. "Real Estate's Climate-Transition Risk: The Path to Net-Zero." MSCI, 2021.

[3] "All Companies." Sciencebasedtargets.org. Accessed: Nov. 3, 2021.

[4] "Momentum Builds for ULI Greenprint Net-zero Carbon Operations Goal as Eight New Real Estate Companies Representing Over 2,400 Buildings Publicly Align." ULI, 2021.

signatories, representing more than USD 635 billion AUM and over 11,000 properties, as of November 2021.[5]

- World Green Building Council's Net Zero Carbon Buildings Commitment for new developments and existing buildings: 160 signatories (126 businesses, 28 cities and six states).[6]

While these frameworks and commitments are helpful, they are not all real estate-specific, so do not address key industry considerations like data coverage (how much actual emissions data is available as opposed to being estimated). They also do not address all components of credible reduction targets, such as targeting short-term and long-term reductions and including implementation strategies to support targets.

Investor challenges on the net-zero journey

Real estate investors are seeking to build more sustainable portfolios, deliver impactful changes, report on progress, integrate risk analysis and push toward net-zero. Below are key challenges they face on this journey.

Investor challenge	Regulation and reporting	Peer-group comparison
Integrate climate metrics into portfolio analytics	Align with Task Force on Climate-related Financial Disclosures (TCFD)	Comparison across funds, peer groups and indexes to help provide industry benchmarks
Inform active asset management decisions	Comply with Sustainable Finance Disclosure Regulation (SFDR)	Gain transparency on variables such as warming potential, physical and transition Value-at-Risk and carbon intensity
Run due diligence and investor reports	Other disclosure requirements for real estate, including the EU Taxonomy	

[5] "BBP Climate Commitment." Betterbuildingspartnership.co.uk. Accessed Nov. 3, 2021.

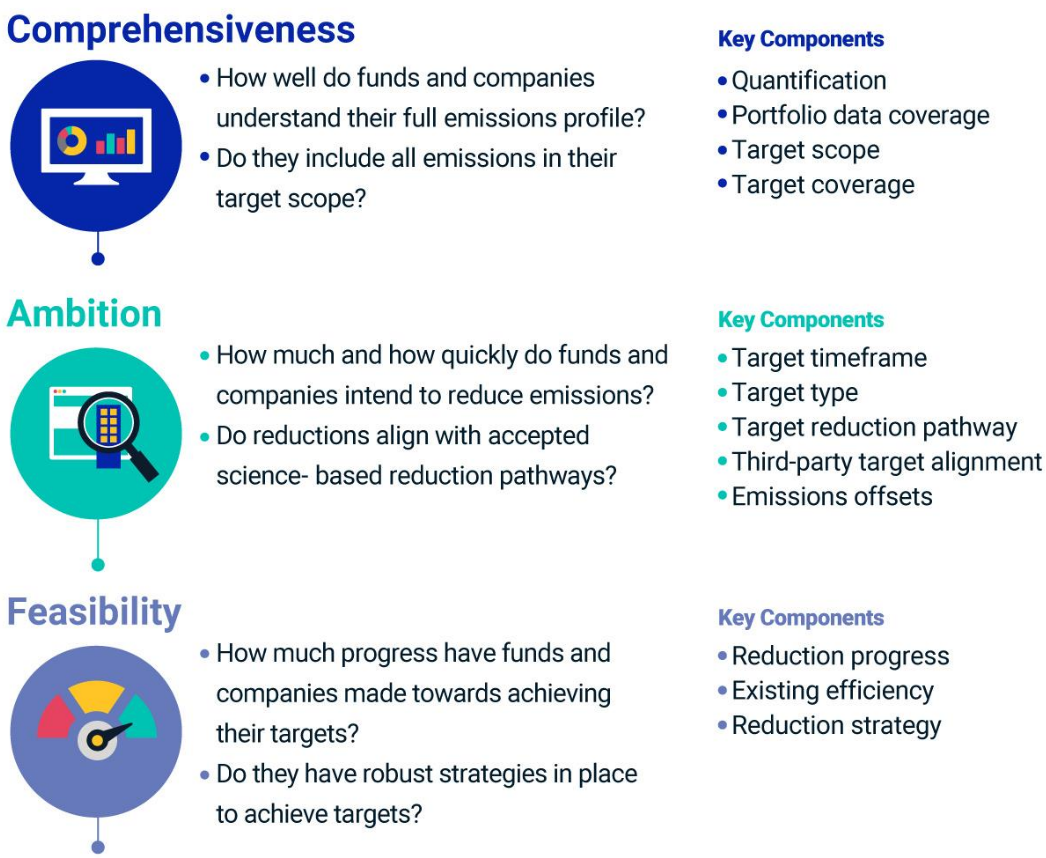
[6] "The Net Zero Carbon Buildings Commitment." Worldgbc.org. Accessed Feb. 14, 2022.

Approach to decarbonization and net-zero

What makes a net-zero target credible? As more and more real estate funds and companies adopt such targets, they want to ensure that the targets are complete, rigorous and effective. To this end, we offer an approach to help them develop and evaluate decarbonization and net-zero targets.

Our approach evaluates the credibility of commitments using three qualities: comprehensiveness, ambition and feasibility. Each of the three qualities includes several key components. Assessing each component is important not only for an overall evaluation of funds' and companies' net-zero commitments; the process also highlights strengths and opportunities for improvement.

Exhibit 1: Decarbonization and net-zero evaluation approach



To pilot the approach, we assessed the decarbonization and net-zero commitments of funds in the MSCI Pan-European Property Fund Index (Unfrozen) (PEPFI).

For the pilot, we asked PEPFI funds to provide data on decarbonization and net-zero commitments. Nine of 16 PEPFI funds responded to our information request. For funds that did not respond, we reviewed public information.

Using both the submitted and publicly available information, we analyzed PEPFI targets and identified trends and key takeaways. Where data or responses were not available, we assumed the practice or target element was not present. However, in these instances, rather than stating that the practice or element definitely does not exist, we indicated that information was not available.

Some components of the approach require more granular, property- and region-specific emissions data than was captured through the information request or publicly available documents. We detail how these components are evaluated, adding how we plan to include this more-detailed information in future evaluations as property emissions data availability and disclosure improves.

PEPFI: Tracking the performance of pan-European open-end pooled funds

The objective of the MSCI Pan-European Quarterly Property Fund Index (Unfrozen) (PEPFI) is to track the quarterly performance of a peer group of unlisted open-end pooled funds with a pan-European investment mandate. The index monitors the performance of these funds on a quarterly basis, both at the fund level (NAV-level performance) and at the asset level. Measuring performance at both levels allows investors to explain and analyze the drivers behind fund-level performance. It also attributes performance by property type and country and identifies the contributions of cash, debt and other layers above and beyond physical brick and mortar properties. The index time series goes back to 2004. As of September 2021, the index comprised 16 funds, with an NAV of EUR 42.2 billion.

Quality #1: Comprehensiveness

Quantification

Ideally, targets are informed by thorough and reliable GHG data. The first component of comprehensiveness evaluates how real estate funds and companies quantify their emissions, based on such data.

In real estate, direct (Scope 1) emissions typically come from on-site or vehicle combustion and indirect (Scope 2) emissions come from purchased energy like electricity. Scopes 1 and 2 are commonly included in the overall emissions total; they represent minimum expectations for comprehensiveness.

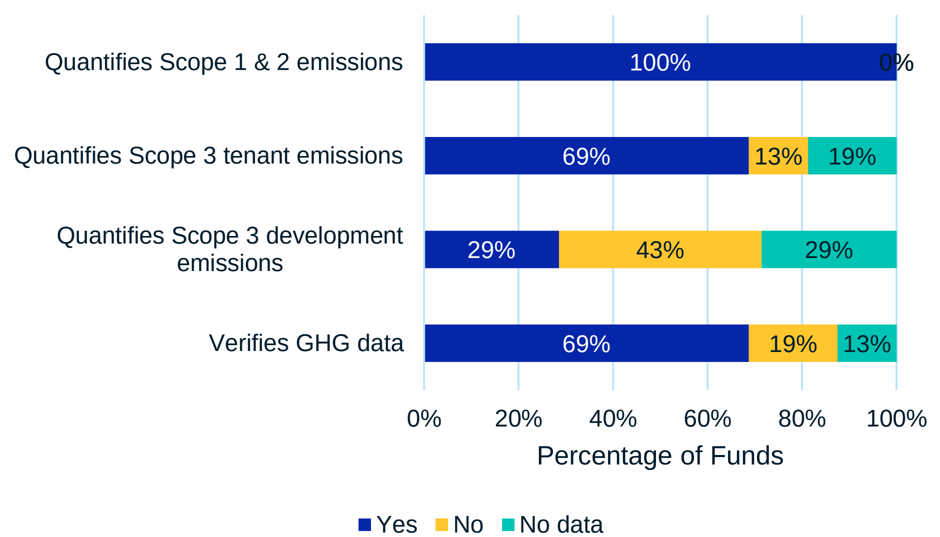
Scope 3 emissions are all indirect emissions that result from activities upstream (such as purchased or acquired goods and services) and downstream (such as sold goods and services) in the organization's value chain. These emissions can contribute significantly to real estate funds' and companies' overall emissions profile. Where relevant, Scope 3 emissions data should be included in quantification. Two of the most material Scope 3 emissions sources are tenant-controlled energy usage — that is, emissions from buildings where a tenant controls operations and pays for utilities (Scope 3 Category 15 of the GHG Protocol) and emissions associated with development construction activities and embodied carbon in building materials (Scope 3 Categories 1-4 of the GHG Protocol). Other examples of Scope 3 emissions are waste production and corporate travel.

To provide a full emissions footprint, estimating for data gaps is preferred to excluding missing data. For added assurance that the data is reliable and thorough, funds can have emissions data verified by an independent third party.

Pilot insights

All PEPFI managers measure and report Scope 1 and 2 emissions. In addition, most, but not all, companies are making efforts to measure downstream tenant emissions. The main gap remains the quantification of development emissions, as only 29% of PEPFI funds reported doing this. To make credible net-zero pledges, real estate funds and companies may need to quantify such data, requiring more collaboration with suppliers and development partners to improve both the availability and quality of data.

Exhibit 2: Quantification practices



Portfolio data coverage

Portfolio data coverage assesses the degree to which operational Scope 1, 2 and 3 emissions quantification is based on actual, as opposed to estimated, data. The measure used is the percentage of the portfolio area (i.e., m^2) where emissions data is measured. The focus is on operational portfolio emissions — that is, asset Scope 1 and 2 and Scope 3 emissions for tenant-controlled operations.

Target credibility scales with the availability of actual (non-estimated) emissions data. Credible decarbonization and net-zero targets require actual data to ensure real-world results. We recommend that real estate funds and companies work to develop complete portfolio emissions data coverage to inform their targets. Ultimately one cannot manage what is not measured.

Portfolio data coverage helps differentiate leaders who have taken the steps to understand their portfolio coverage despite the challenges associated with collecting data. For decarbonization and net-zero targets, funds may strive to attain high portfolio data coverage and apply verified estimates where there are gaps in information.

Case study: PATRIZIA addressing tenant-controlled emissions in net-zero goals

PATRIZIA PanEuropean Property LP (PanEuropean) is a core, open-end balanced fund focused on logistics, office, residential and food-anchored retail in major cities in Western Europe and Scandinavia. In 2021, the fund set a net-zero target in alignment with sectoral decarbonization pathways to 1.5°C.

Including Scope 3 tenant emissions is an important but challenging element of creating a comprehensive net-zero target. PanEuropean — like many funds — does not have full access to tenant utility data and therefore lacks full portfolio data coverage for Scope 3 tenant emissions. To address this challenge, PATRIZIA has applied several strategies.

PATRIZIA used proxy data to estimate missing tenant-controlled emissions. This enabled PanEuropean to set a net-zero target, evaluate areas on which to focus efforts and to understand the largest decarbonization opportunities and risks across the portfolio. PATRIZIA continues to work to increase data coverage. They have taken advantage of the fact that some jurisdictions have regulatory frameworks allowing owners access to building utility data. Elsewhere, PATRIZIA successfully has requested data from tenants on a voluntary basis. Explaining the reason for the data collection and making the request simple has been critical to this effort.

PATRIZIA's tenant engagement approach also helps to lay the foundation for collaboration on emissions reductions. Starting a conversation and understanding tenants' emissions goals provides opportunities for both parties. One recent engagement led to PATRIZIA collaborating with a tenant to develop a rooftop solar array on a cost-sharing basis, lowering both emissions and tenant energy costs.

Lack of data coverage for Scope 3 tenant emissions does not need to be a barrier to setting and meeting net-zero targets. The company enacts strategies to optimize coverage where possible and engages tenants to foster collaboration and advance progress.

Pilot insights

Publicly available fund-level emissions and coverage data was largely not obtainable; therefore, analysis of data coverage was limited to funds that responded to our information request.

For PEPFI funds that responded, data coverage ranged from 24% to 100%. This wide variability may be attributed to several factors, including differing strategies for collecting data and differences in portfolio composition. For example, some companies may hold more assets where tenants receive bills directly. Depending on the property type and contracts, tenants may control a significant percentage of overall emissions, so getting more-complete data will require collaboration.

The large range in portfolio coverage demonstrates the importance of this evaluation component. Company funds without 100% data coverage may need to strive for full coverage as they set and execute net-zero strategies.

Target scope

The emissions scopes that a fund or company includes in its target are a critical part of target credibility.

Companies and funds that include all material emissions sources, including upstream and downstream Scope 3 emissions, have more comprehensive targets. For real estate funds, these typically include:

- Scope 1 and 2 emissions
- Scope 3 tenant emissions
- Scope 3 emissions associated with developments, redevelopments and embodied carbon

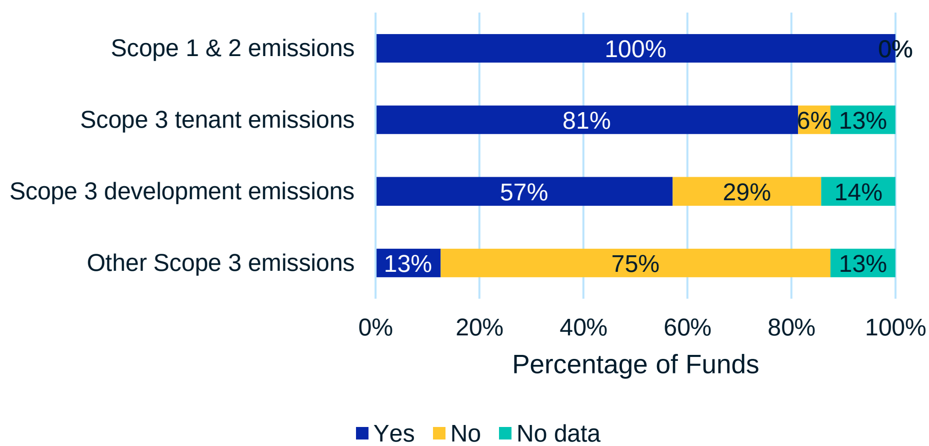
Some funds and companies also may include other Scope 3 emissions.

Pilot insights

All PEPFI fund managers have set Scope 1 and 2 emissions targets. The majority of PEPFI managers (81%) also include Scope 3 tenant emissions, and 57% include Scope 3 development emissions in their targets, despite the challenges inherent in collecting and quantifying complete data.

Funds and companies that include Scope 3 emissions associated with developments, redevelopments and embodied carbon have more comprehensive targets and are at a more mature stage on their journey to net-zero. The fact that only 13% of managers reported including other emissions within their targets indicates that the emissions discussed above are the most material sources across the industry.

Exhibit 3: Emissions scopes included in targets



Target coverage

The target coverage component of our approach evaluates what percentage of the total portfolio emissions is represented by the emissions that are in scope. For example, a fund target may only apply to Scope 1 and 2 emissions but, depending on the portfolio composition, this could equate to a high or low percentage of the portfolio's total emissions. To elaborate, a fund may be composed of properties where tenants largely control energy consumption, leading to a lower percentage of emissions being Scopes 1 and 2. The greater the percentage of emissions included in a target, the more comprehensive it is. For example, to meet Science-Based Target initiative net-zero requirements, targets must cover at least 95% of total emissions, including value-chain emissions.[7]

Pilot insights

For the pilot, we requested only operational emission coverage — Scope 1, 2 and 3 tenant operational emissions. Among the PEPFI funds that responded to the information request, target coverage ranged from 3% to 100% of operational emissions. The coverage largely depended on the emissions scopes included in the target and the associated variability in coverage (e.g., if only Scope 1 and 2 emissions are included, this omits tenant emissions and tends to be a lower level of coverage).

The fact that some net-zero targets cover only 3% of operational portfolio emissions suggest that not all net-zero targets can be taken equally. In this instance, the target covers only Scope 1 and 2 emissions, likely common areas for select buildings with tenant-controlled spaces and energy comprising the majority of the portfolio. To fully understand fund emissions date, one must look to not only which scopes are included in a target, but also what percentage of emissions those targets cover.

[7] "SBTi Corporate Net-zero Standard." Sciencebasedtargets.org. Accessed November 2021.

Quality #2: Ambition

Target time frame

To meet climate goals, the world needs to achieve global net-zero emissions by 2050 and significantly reduce emissions leading up to that date. By 2030, for example, global emissions need to be reduced by 45% from 2010 levels, according to the IPCC.[8] To achieve that goal, real estate funds and companies may need to drastically cut emissions in both the short and long term.

Both short- and long-term targets are crucial to ambition. Ideally, short-term (five to15 year) targets — also referred to as interim targets if they precede a net-zero target — are aligned with reduction pathways to net-zero while long-term (over 15 years) targets *are* net-zero.

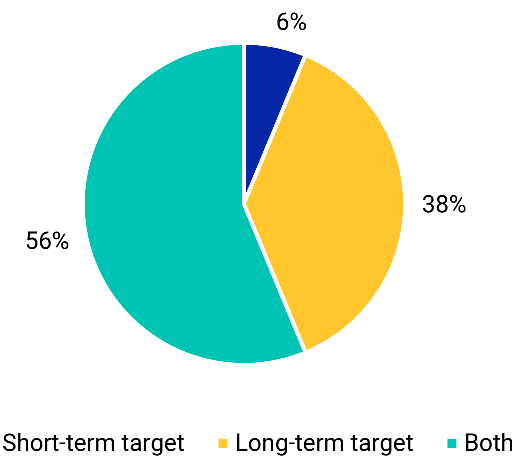
If a fund or company has a short-term target only, it may lack a long-term vision in line with net-zero expectations. Conversely, implementing only a long-term net-zero target may demonstrate a lack of accountability. Companies that set and meet interim targets provide ongoing measures of their ability to achieve their goals. An examination of progress-to-target is a component of this analysis and is included in the "feasibility" section.

[8]"Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C Approved by Governments." IPCC.ch. Accessed November 2021.

Pilot insights

Although 94% of PEPFI funds have set long-term GHG targets and all but one of those are net-zero, only 62% also have short-term targets. Such short-term targets may provide improved accountability on the way to long-term net-zero.

Exhibit 4: Target time frames



Target type

Emissions reduction targets can be absolute or intensity-based.

Absolute targets specify emissions reductions relative to a baseline (e.g., 30% reduction in emissions by 2030 from a 2005 base year); therefore, they require real emissions reductions.

By contrast, intensity-based targets specify emissions reductions relative to an output. Intensity-based emissions are most often seen in this industry by floor space, but occasionally by property value, as well. Because growth factors can offset emissions reductions, especially when funds and companies are investing in and developing new properties, intensity-based targets do not always translate to real emissions reductions.

Absolute emissions reductions guarantee a positive contribution to the transition to low-carbon operations. In general, absolute emissions targets are preferable to intensity-based targets. If intensity-based targets are used, it is best practice for the fund or company to demonstrate that the target will lead to real emissions reductions in line with accepted decarbonization pathways.

Pilot insights

Most PEPFI managers have intensity targets for short-term goals, often complemented by absolute long-term net-zero targets. Because all long-term net-zero targets are absolute (by definition), absolute targets are more common.

Exhibit 5: Absolute vs. intensity-based targets (% by fund count)

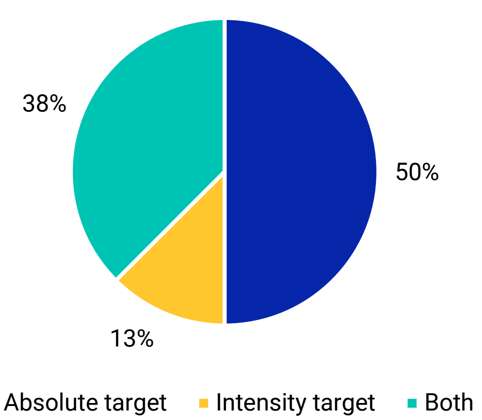
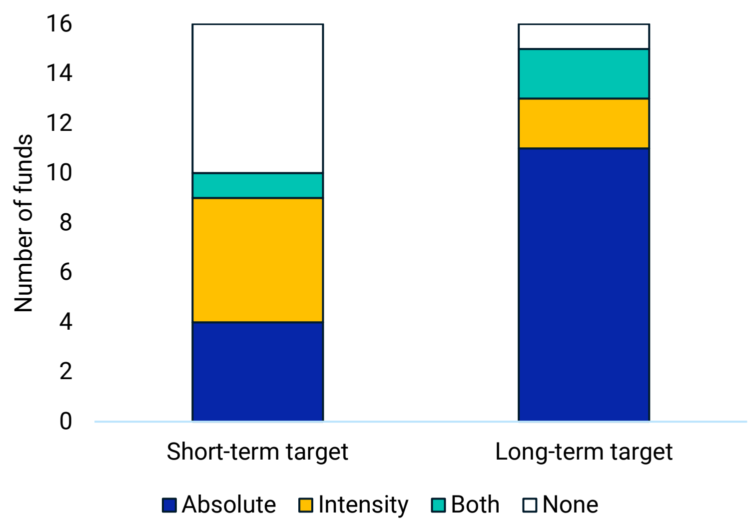


Exhibit 6: Analysis of target type and time frame



Target reduction pathway

To achieve global climate goals, nations and international science and business communities have mapped out required emissions reduction pathways by industry and region. These various pathways define the absolute reduction that real estate funds and companies aim for when pursuing an ambitious target. Pathways are commonly aligned with a 1.5°C or 2°C warming scenario, with 1.5°C being more ambitious and aligned with the latest global climate goals from the COP 26 UN Climate Change Conference.

To evaluate target reduction pathways, we normalized targets to an annual absolute reduction figure. We then compared this figure with an appropriate decarbonization pathway, informed by both the property type and geographic location of a given real estate portfolio. Moving forward, MSCI will apply real estate-specific country-level decarbonization pathways aligned with 1.5°C to asset-level data to assess alignment. However, for this pilot project, we examined fund-reported third-party alignment.

Third-party target alignment

Assessing country- and asset-class-specific absolute reductions against accepted decarbonization pathways is data- and time-intensive. To achieve alignment with accepted emissions reduction pathways, many companies and funds use third-party tools and frameworks. For example, MSCI has developed real estate decarbonization pathways covering 1.5°C, 2°C and 3°C and both the SBTi and Carbon Risk Real Estate Monitor (CRREM) verify targets against a 1.5°C or 2°C pathway. Evaluating whether a fund or company has its target aligned with or exceeding an accepted pathway and/or its target approved by a credible third party is an indicator of ambition. This metric is used as a proxy for target reduction pathway alignment, although third-party pathways are not always country- and property type-specific.

Pilot insights

The vast majority (88%) of PEPFI funds were aligned with a 1.5°C decarbonization pathway simply because they have pledged to achieve a net-zero target by 2050 at the latest. Forty-four percent of funds self-reported that they used third-party reduction pathways to inform the required trajectory for their emissions reductions — demonstrating greater credibility. But only 19% of funds reported having a Science-Based Targets initiative-approved target.

88%
Net-zero

19%
SBTi approved

44%
align w/ third-party reduction pathway

Emissions offsets

Even as real estate funds and companies reduce emissions to the lowest possible levels, residual emissions from back-up fuels, embodied carbon or other sources may prevent a fund or company from achieving absolute zero. In these instances, carbon removal offsets or removals may be applied. Offsetting residual emissions through carbon removals — defined as natural or technological strategies to remove carbon dioxide from the atmosphere and store — is preferable to offsetting through avoided emissions.[9]

This component of our approach evaluates whether funds and companies are currently using offsets and if they have a strategy governing the use of them to achieve their targets. Although purchasing offsets supports the offset markets and reduces global emissions on a net basis, relying on offsets in the long term is incompatible with the reductions needed to achieve global climate goals. Fund and company targets that prioritize real emissions reductions and have a strategy governing the use of offsets as a last resort are considered more ambitious. While the carbon-offset market is yet to reach maturity and its use is currently limited, it may be that best practice will favor the quality of offsets, with regard to additionality (e.g., contributing net-new offsets; not purchasing existing offset projects) and permanence (e.g., use of offsets that store or last longer).

None of the PEPFI funds reported that they are currently using emissions offsets. Thirty-eight percent reported that they have an offset strategy. We believe the presence of such a strategy demonstrates a more mature approach to achieving net-zero targets.

[9] "Carbon Removal." WRI.org. Accessed November 2021.

Quality #3: Feasibility

Reduction progress

As real estate funds and companies set more ambitious targets, they need to demonstrate real emissions reduction progress. The better a fund or company can demonstrate that it is on track to meet its target, the more feasible and therefore, more credible, the target is considered.

To assess reduction progress, we measure actual reduction from the target base year and compare it with the expected reduction based on the fund or company target. If this data is available, we can compare the actual normalized annual emissions reduction to the expected annual emissions reduction based on the target. This effectively compares the trajectory defined by the target against actual progress.

While progress toward meeting targets often doesn't follow a straight line, funds may want to demonstrate that they are continuously making progress in alignment with the reduction necessary to achieve the target. This is an important indicator of feasibility. Funds and companies that are meeting or exceeding the expected emissions reduction could be considered to have more credible targets.

We did not evaluate this component in the PEPFI pilot because it requires more data than was included in our information request. As we collect more emissions data, we will be able to evaluate this component.

Existing efficiency

Existing efficiency is the difference between current emissions (and intensity) and accepted decarbonization pathways. It reflects how far funds and companies must go to achieve net-zero, regardless of their targets.

To evaluate this metric, we assess a fund or company's emissions intensity per square meter relative to property type and country-specific decarbonization intensity pathways. Funds and companies with emissions intensities in line with, or lower than, the expected carbon intensity for a 1.5°C pathway are on track to achieve net-zero, and therefore, their targets are considered more feasible.

Globally, the industry needs to decarbonize buildings to achieve global net-zero emissions, but especially inefficient ones. Less efficient, higher-emitting funds and companies in this sector have a greater burden to reduce than more efficient, lower-emitting peers.

We did not include this analysis in the PEPFI pilot, which focused on portfolio-level data. However, it will be included in future iterations.

Reduction strategy

A feasible decarbonization or net-zero target requires a strategy or implementation plan. This component assesses whether a fund or company has a strategy, and, if so, what that strategy contains.

Effective decarbonization or net-zero strategies share common elements. The table below details elements needed to evaluate reduction strategies.

Exhibit 7: Approach to evaluating reduction strategies

Strategy element	Details
Public commitment to net-zero standard or organization	Public net-zero commitments demonstrate accountability and alignment with peers and standards. Real estate funds and companies can participate in several public programs, including the Net Zero Asset Managers initiative, ULI Greenprint Net-Zero Operations Goal and Better Building Partnership Climate Commitment.
Tieing executive/ fund management compensation to targets	Linking executive pay to targets aligns interests across a fund or company and shows achieving real reductions is a priority.
Net-zero commitments in fund documents and policies	Commitments in fund documents hold fund managers accountable to investors and may legally require the manager to take appropriate action.
Planned initiatives to reduce emissions	A credible target strategy identifies the actions a fund or company will take to achieve reductions. Common real estate emissions reductions initiatives include energy efficiency, electrification, on-site renewable energy and renewable energy purchasing.
Timelines for planned initiatives	After identifying planned initiatives, strong strategies include a timeline for implementation.
Costing analysis	A costing analysis demonstrates that the fund or company understands the costs associated with transitioning assets and has a plan to do so efficiently. This analysis considers whether costs can be shared with tenants, are part of regular asset management expenses or are net-new.
Internal price on carbon	A cost assigned to each unit of carbon emitted by a company. This cost is then factored into business and investment decisions, incentivizing efficiency and

Strategy element	Details
	enabling low-carbon innovation. This price also contributes to an overall risk management strategy (e.g., de-risk against future carbon price)
Approach to offsets and renewable energy credits (RECs)	Achieving net-zero requires reducing emissions as much as possible — often partially through the use of RECs — and then offsetting remaining emissions that cannot be abated. Including an approach to offsets and RECs demonstrates a fund or company's understanding of its pathway to net-zero and the role that offsets and RECs will need to play.
Cap on use of offsets	To achieve true net-zero, offsets must only be used as a last resort. Implementing a cap on the use of offsets guarantees real emissions reductions and makes funds and companies less vulnerable to fluctuations in the price of offsets over time.
Public disclosure	Having a publicly available strategy demonstrates that the fund or company holds itself accountable to its stakeholders.

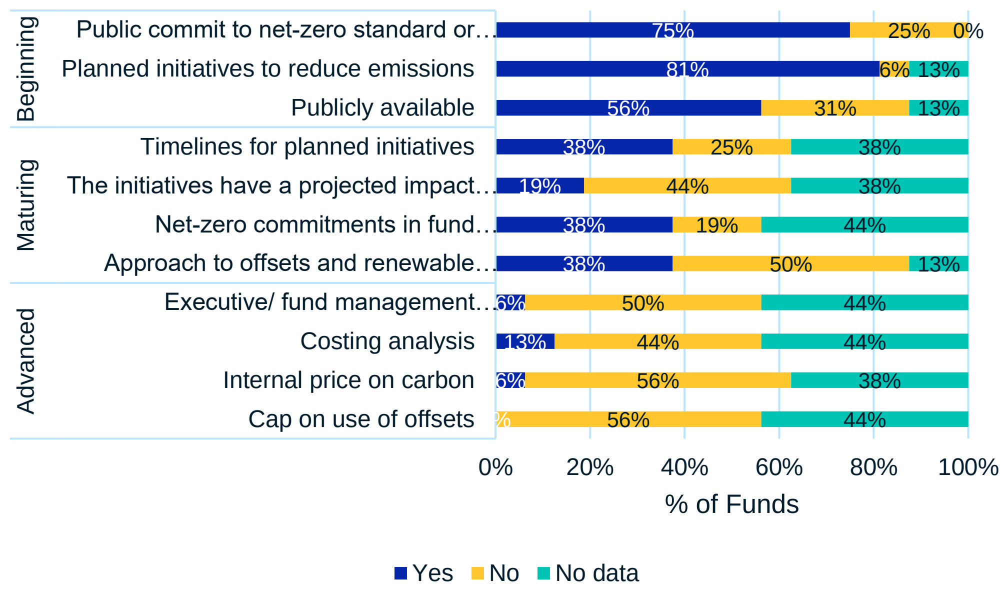
Pilot insights

All PEPFI funds that responded to our information request reported having a strategy in place; some with public-facing strategies. The sophistication of the strategy varied from fund to fund, and there appears to be a common maturity curve. Funds started by making a public commitment to reduce emissions and identify strategies. Next, they integrated initiatives into plans, setting timelines and formalizing approaches in policies and fund documents. The most mature strategies costed out decarbonization initiatives, including costs in financial plans and linking target performance to management or executive compensation.

Exhibit 8: The evolution of net-zero strategies

Beginning	Maturing	Advanced
○ Publicly commit to net-zero ○ Plan GHG reduction initiatives ○ Publicly disclose approach	○ Set timelines for initiatives ○ Formally incorporate net-zero into policies and fund documents ○ Establish approach to renewable energy credits and offsets	○ Link executive/fund management compensation to target ○ Plan out costs of initiatives ○ Incorporate internal price on carbon into decision-making ○ Set cap on offsets

Exhibit 5: Quantification practices



Case Study: The European Cities Fund — Implementing a robust net-zero strategy

Nuveen Real Estate's European Cities Fund (a PEPFI participant) has committed to be net-zero carbon by 2040. The strategy-level commitment is aligned with Nuveen's wider net-zero strategy.

Asset-transition plans

The fund has undertaken a series of audits across the portfolio to develop the technical and commercial pathway to achieve net-zero carbon. The strategy follows an "energy hierarchy" by prioritizing the maximization of on-site operational efficiency through building upgrades and deployment of on-site renewable energy. This strategy also includes the procurement of offsite renewable-energy contracts and targeted selection of quality offsets

Identify upgrades	Plan implementation	Integrate into financial plans
○ Conduct portfolio audits to assess baseline and identify initiatives to achieve net-zero, e.g.,: – Energy efficiency – Renewables – Electrification – Building envelope	○ Review asset maintenance and capital plans and lease-renewal schedules to plan implementation of upgrades	○ Determine and categorize upgrade costs, e.g.,: – recoverable expenses – standard capital upgrade costs – marginal cost to achieve net-zero

Capital expenditure is not the panacea

The fund recognizes that capital expenditure alone may not achieve its net-zero targets: Legal and behavioral pathways are equally important to integrate into net-zero strategies. Thus, the fund's net-zero strategy also integrates net-zero thinking across its business and through its stakeholder engagement as follows:

Business area	Example
Investments	• Train investment professionals • Incorporate net-zero into investment decision-making, and portfolio hold-sell analysis
Developments	• Measure embodied carbon • Consider net-zero in development planning
Leasing	• Revise lease language to ensure control of energy upgrades • Engage with occupiers around dual landlord-tenant initiatives
Industry collaboration	• Collaboration with tenants, partners and supply chain to stimulate and integrate net-zero considerations up- and downstream of operations

Conclusion

As major end-users of energy and resources, real estate funds and companies play an important role in the decarbonization of our economy. In line with many global investors and businesses, real estate leaders are committing to do their part by setting targets to reduce emissions, often in line with a 2050 net-zero goal — or sooner. This trend is exemplified by the PEPFI pilot, where 100% of 16 funds have decarbonization targets, 88% of which are net-zero.

Not all targets are equal, however. Credible decarbonization targets need to be comprehensive — they should cover all significant sources of emissions, including upstream and downstream emissions. As the PEPFI pilot demonstrates, a net-zero target that covers only Scope 1 and 2 emissions may be addressing only a fraction of portfolio emissions.

Credible targets also need to be ambitious. They must be science-based, include short- and long-term commitments and align with accepted decarbonization pathways in the short term.

Finally, mature targets are accompanied by strategies that outline initiatives required to achieve net-zero and integrate those initiatives throughout the business, from planning to budgets and incentives, as well as stakeholder engagement.

We hope our approach will guide the many real estate funds and companies that still need to set targets and develop implementation plans.

Next steps

This PEPFI pilot allowed for the development and testing of a real estate-specific version of the MSCI Corporate Net Zero Target Scorecard, and for publishing the framework as a reference guide for real estate investors to consult and use within their organizations.

However, building the framework is only the foundation. Aggregation of published target information can help firms contextualize their approach versus their peer group and the overall market. In addition, where this information feeds into wider real estate Transition Risk and Implied Temperature Rise models, such forward-looking management targets may form key elements of the design, further helping the sector understand, assess, manage and report its climate risk.

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