The State of European Pension Funds' Net-Zero Transition

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CLIMATE POLICY INITIATIVE

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ABOUT CLIMATE POLICY INITIATIVE

CPI is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. CPI has seven offices around the world in Brazil, India, Indonesia, South Africa, the United Kingdom, and the United States.

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EXECUTIVE SUMMARY

To limit temperature increases and avoid the worst impacts of climate change, at least USD 6 trillion in annual climate finance is required globally until 2030, then rising to USD 9 trillion until 2050. Public sector finance alone will be insufficient to close the funding gap. Pension funds, with their significant financial influence and investment capabilities, are uniquely positioned to lead this transition. **This report presents an analysis of data from the Climate Policy Initiative's Net Zero Finance Tracker (NZFT) to explore the progress of 342 European pension funds on targets, implementation, and impact for net zero.**

KEY FINDINGS

Our analysis shows a positive shift in European pension funds' commitment to sustainable investing from 2019 to 2023. In particular, there has been significant progress in setting mitigation targets, followed by fossil fuel related goals, and climate investment targets. Transparency and accountability are crucial in tracking these commitments. By 2023, many pension funds had made their climate action or transition plans publicly available, showing particular improvements in the management and disclosure of climate risks. A few levers have enabled this:

- **Higher quality and ambitious target-setting.** While our study highlights a persistent gap between commitment and action, it also confirms that higher levels of target-setting are associated with greater implementation efforts.
- **Resources and external pressure.** Large pension funds have generally adopted more developed targets and implementation responses, likely due to their better resources, along with regulations primarily targeting large institutions.
- **Regulatory leadership.** Driven by regulation, Nordic countries (Norway, Sweden, and Denmark) and the Netherlands have led on both target setting and implementation, with France pioneering sustainability integration into financial regulations.
- **Membership of net zero coalitions.** Pension funds that are part of a net-zero coalition were significantly more likely to adopt climate targets and implementation actions in 2023.

What ultimately matters is creating an impact on the ground by progressing the real economy toward net zero. Given that European pension funds rarely engage in direct project-level financing, scaling up direct investment in clean energy would require a dramatic shift in their investment practices. However, they can achieve significant impact indirectly by engaging as shareholders and lenders with investee entities such as funds or corporations. In 2023, entities in our sample had indirect equity and debt ownership in more than 1,000 new clean energy and fossil fuel projects amounting to a total project value of USD 331 billion. However, only USD 12.5 million can be conservatively, demonstrably, and transparently attributed to pension funds when the size of their ownership shares, which are usually highly fragmented to ensure diversification, and additionality, are factored in.

Our assessment of ownership trees beyond pension funds indicates that asset managers have been crucial in indirectly enabling USD 14 billion, or more than 50% of new investments in the

energy sector traced back to our sample of large global financial institutions.[1] As a result, greater impact can be achieved by enhancing pension funds' engagement with their asset managers, in order to encompass more of these managers' investment practices, beyond the development of climate products and what they handle on behalf of the pension funds.

RECOMMENDATIONS

To further scale up pension funds' impact in the real economy, we provided a set of recommendations around five key areas of this report, with actions charted out for specific key stakeholders.

Table ES1: Solutions and specific actions for net-zero pensions and stakeholders

Solution	Actions
1. Bridging the gap between pension funds' asset ownership and asset management	
Increase control of investment decision-making strategy and principles	**CSOs**: Increase citizens' influence on investment decisions, especially within Defined Contribution schemes, by building awareness on how individual members can put pressure on providers and employers. **Pension funds**: Increase member participation in shaping their responsible investment policies by establishing a member dialogue model. **Regulators:** Allow pension funds to solicit the climate preferences of their members and integrate these into investment decision-making **Governments:** Evaluate the consolidation of defined benefit schemes into a public sector superfund which could lead to stronger commitments to climate and sustainability goals.
Scale up stewardship and engagement with corporates	**Pension funds**: ▪ Advance climate finance alignment concerns through third-party advisors / investment consultants to inform / drive broader corporate engagement ▪ Increase the transparency of their engagement activities to increase pressure on corporates. ▪ Employ escalation strategies with significant GHG emitters **Coalitions**: Help small pension funds pool with others to more effectively engage with corporates.
Encourage asset managers' stewardship and engagement activities with investee corporations	**Regulators**: Mandate asset managers of pension funds to report on shareholder engagement **Pension funds**: Draft voting guidelines to outline expectations for their asset managers and effectively guide proxy voting. **Coalitions**: Help small pension funds pool with other funds to more effectively influence voting via asset managers
2. Transitioning passively managed investment to net zero	
Transition passively managed investment to become Paris-aligned	**Pension funds and coalitions**: ▪ Demand net-zero financial products and services also across the passive product arena, by exploring the feasibility of creating index-tracking portfolios that are sensitive to climate goals ▪ Improve the environmental performance of existing funds by engaging with asset managers where there are conflicts between climate factors and value factors. **Data providers:** Evaluate the climate performance of investment vehicles.

1 We looked at a subset of large private financial institutions (banks, asset managers, insurers, asset owners), including financial institutions that are Net Zero Alliance Members, tracked as part of the Net Zero Finance Tracker.

Solution	Actions
3. Scaling up investment in climate solutions, including in EMDEs	
Support pension funds' access to financial structures for investment in clean energy infrastructure	**Governments:** Develop guidance on green funds and provide tax incentives to invest in priority areas. **DFIs:** Facilitate access to large-ticket, low-cost, long-term investment opportunities in risk-diversified portfolios. Provide greater transparency on investment performance and risk exposure. **Data providers**: Collect and share loan default information for EMDE assets and evaluate the climate performance of investment vehicles. **Pension funds**: Create demand for impact funds targeting real, measurable impact on capital allocation.
4. Expanding real economy impact beyond own assets	
Increase influence on asset managers beyond assets owned, including at the ecosystem level	**Pension funds**: Extend Asset Managers' assessment to general investment philosophy, overall sustainability practices, and management of other assets. **Coalitions**: Critical to engage systemically with policymakers, regulators and industry associations within and beyond pension funds' own jurisdictions, particularly where climate legislation is lagging.
5. Improving data and methodology for net zero metrics	
Improve assessment of portfolio emissions data and alignment, implementation of climate finance taxonomies, and third-party validation of targets.	**Data providers**: Scale up reporting efforts and platforms that can consolidate data and methods on corporate emissions, finance goals, and transition plans alignment. **Regulators**: ▪ Mandate the adoption of stringent metrics and targets by pension funds. ▪ Mandate the development of effective corporate transition plans and their disclosure, including detailed metrics on emissions and progress toward decarbonization. **Regulators and Coalitions**: ▪ Standardize emission reporting frameworks ▪ Improve and scale up the adoption of internationally accepted taxonomies. ▪ Promote high-quality, consistent third-party assurance of critical data for decision-making.

CONTENTS

INTRODUCTION

To limit temperature increases and avoid the worst impacts of climate change, at least USD 6 trillion is required globally in annual climate finance through 2050. The climate transition depends on substantial capital flowing to clean energy supply. Renewable energy, as well as power and heat transmission and distribution systems will require an additional USD 1.2 trillion annually until 2050 to keep within a global temperature rise of 1.5°C (CPI, 2023 and 2024a). Of all these sectors, only solar PV is on track**,** and efforts to reduce emissions from coal, oil, and natural gas supply are significantly behind (IEA, 2023). The transition is not just about funding clean energy but also about curbing investment in new fossil fuel infrastructure while prioritizing carbon mitigation strategies and the phase-out of existing fossil assets rather than simply pursuing divestment.

Considering the scale of investment required, public sector finance alone will be insufficient to resolve the funding gap. Attracting the additional private capital that is needed will require private financial institutions to make ambitious climate commitments, act strongly on implementation, and ensure that these translate into clear impacts in the real economy.

Pension funds are uniquely positioned to lead this transition due to their significant financial influence and investment capabilities. In 2022, pension funds managed approximately USD 54.4 trillion, accounting for 47% of global assets under management (AuM), with this figure projected to rise to USD 64.9 trillion by 2027 (PwC, 2023a). Traditionally focusing on bonds and equities, in recent decades pension funds have also allocated assets to private equity, real estate, infrastructure, and hedge funds, to enhance risk and liability management, as well as financial returns. This use by pension funds of a broader range of financial instruments has increased their influence on the overall investment landscape.

Pension funds also have a key role in influencing asset managers and consultants. In 2022, pension funds accounted for 24% of the client capital managed by asset managers in Europe. In the UK, pension funds were the largest client group for UK asset managers by AUM, representing 34% of the total (IPE, 2023a). Meanwhile, a growing trend toward outsourcing to asset managers has been observed, driven by factors such as increased complexity and a greater reliance on alternative investments.[2]

Pension funds are exposed to extensive and complex climate-related risks due to the long-term nature of their investments. This makes management of these risks a strategic necessity. Climate-related physical, transition, and litigation risks can all significantly disrupt the businesses they invest in, lead to stranded assets and potential devaluation of investments.

Additionally, their investment mandates allow them to allocate capital to areas that are essential for the climate transition, such as climate-aligned infrastructure. These funds' mandates to manage capital for long-term performance align with the extended timelines and stable returns associated with infrastructure projects, including those in the renewable energy sector (CPI, 2022; GSAM, 2023). This is particularly true in European markets, where

2 A 2022 survey of 396 asset owners across 40 countries, including 170 pension funds, revealed that 30% of respondents had increased the proportion of their assets managed by external managers over the past three years, up from 15% in 2018 (bfinance, 2022). In a separate 2023 European Pension Survey by Goldman Sachs, which surveyed 126 senior defined benefit pension fund managers and executives, approximately 40% of respondents reported hiring external asset managers to develop their sustainable investing policies (Goldman Sachs, 2024).

the transition from defined benefit to defined contribution schemes, which emphasize return enhancement, presents a key opportunity to invest in sustainable energy projects with long-term growth potential (Attridge et al., 2024).

In this context, adopting a net-zero strategy and implementing actions to achieve it is fundamental for pension funds' long-term survival as businesses (A4S, 2021), and becomes an intrinsic part of their fiduciary duty. Since pension funds have a responsibility to protect the long-term interests of their beneficiaries, they must consider how climate change could affect both the financial returns and the future quality of life for retirees. Ignoring climate-related risks could harm the value of investments and negatively impact the capital holders over time.

Most information to date on pension funds' net-zero transition comes from narrow surveys of large institutions and trend reports by net-zero coalitions. There has previously been no comprehensive effort to track funds' progress (including relative to each other) on their commitments and interim milestones or the extent to which their operations are being reshaped to respond to environmental needs to deliver real economic impact. When data and insights are incomplete, it is difficult for investors, policymakers, and civil society to chart progress, understand where policy frameworks need enhancement, and incentivize institutions to improve.

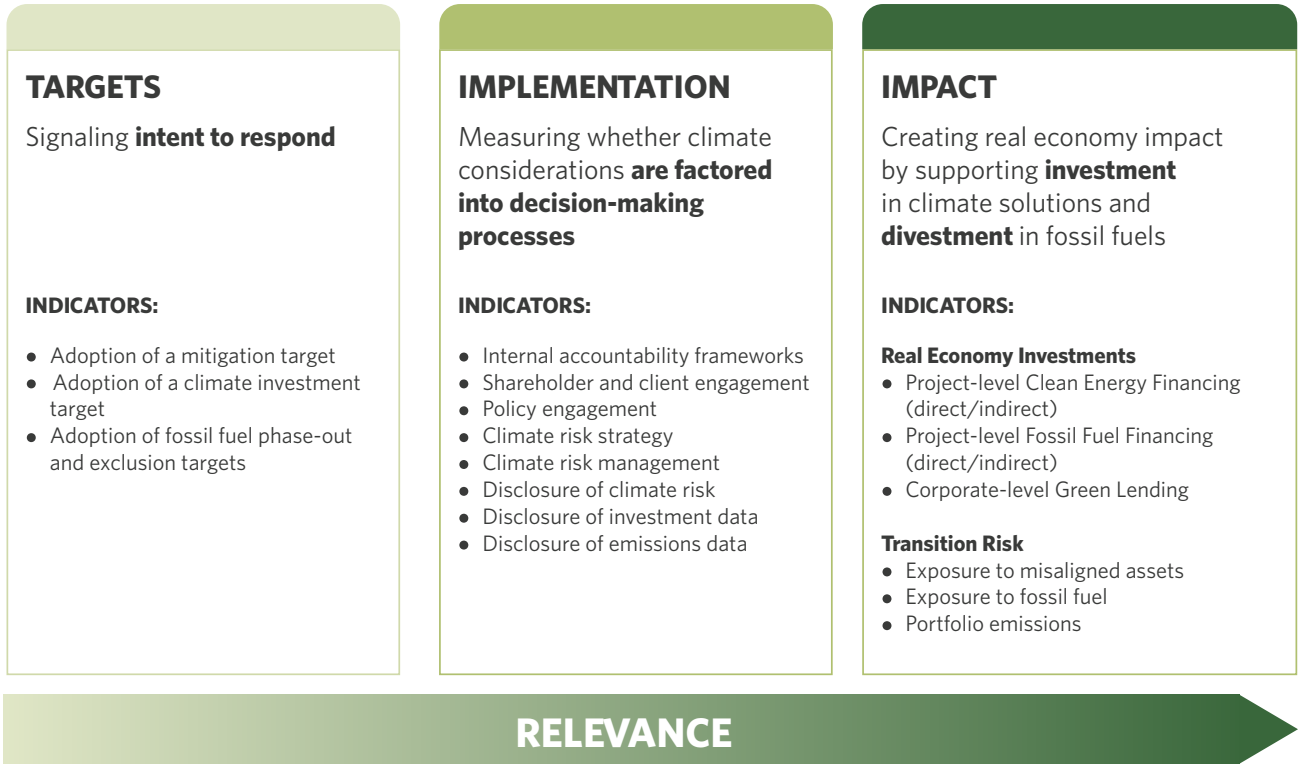
This report provides the most comprehensive assessment of pension funds' progress towards net zero to date. As the first report of its kind, it establishes a baseline against which to track in the coming years. These efforts aim to drive transparency and accountability to support the decarbonization of the financial sector.

This report focuses on European pension funds due to the leadership of many of this region's governments on climate regulation and mandating of related disclosures, as well as European pension funds' ability to influence global standards for institutional investors worldwide. This report is the first step of a multi-year project that will, funding allowing, expand analysis of pension funds across OECD jurisdictions.

METHODOLOGY

We use data from Climate Policy Initiative's Net Zero Finance Tracker (NZFT) to analyze the progress of European pension funds from 2019 to 2023. The NZFT provides a comprehensive assessment of how finance institutions are progressing on Paris Agreement goals and delivering net-zero impact on the ground, using a set of indicators organized around three dimensions: 1) **Targets**—what targets have been set; 2) **Implementation**—how these targets are integrated into due diligence, internal processes, and operations; and 3) **Impact**—how the implementation of targets, in turn, drives investment decisions and impacts on the ground, as shown in Figure 1.

Figure 1: Three dimensions of analysis



Each indicator is assessed by capturing, standardizing, and benchmarking action across multiple data sources—including CDP, Principles for Responsible Investment (PRI), InfluenceMap, ShareAction, and many others—offering the most comprehensive available of large financial institutions.[3] Indicators are assessed in alignment with existing international net zero and transition plans frameworks (ACT Finance, GFANZ, ISSB, NZAOA, PCAF, TCFD, TPT, UN HLEG, and others). Specifically:

For Targets and Implementation dimensions: Indicators are scored using a tiered badge system, which assesses tracked actions against those considered necessary for a net zero transition. The five badging categories are:

- **No Action**: There is no evidence of action, or plans regarding the indicator
- **Planned Response**: There is evidence that the organization plans to act
- **Initial Response:** Actions have been taken within the indicator, but do not meet the minimum alignment requirements
- **Partial Response**: Actions meet all partial alignment requirements
- **Full Response:** Actions meet all full alignment requirements

For the Impact dimension: Unlike targets, which are prospective, or implementation, which is ongoing, the impact section is retrospective, measuring what has already occurred. Impact is assessed using quantitative indicators relating to activities that either support a net zero transition (e.g., green bonds and new project-level investment in climate solutions), or detract

3 For more details, see https://netzerofinancetracker.climatepolicyinitiative.org/

from it (e.g., new project-level fossil fuel finance). In the current iteration of the NZFT, we focus on direct and indirect investment in the deployment of new clean energy and fossil fuel capacity in the power sector.

For details of the indicators used, see the annex. For a detailed overview of the existing frameworks used, and how badges/scoring apply to various dimensions and indicators, see the NZFT methodology (CPI, 2024b).

Despite efforts to continuously improve the NZFT data used in this analysis, data availability remains a constraint, as financial institutions' climate disclosures are relatively new and incomplete. There are also delays in entity-level voluntary disclosures and gaps deriving from those that do not yet disclose progress to data reporting initiatives, or do not provide data in standardized, accessible formats. The ongoing regulatory shift from voluntary to mandatory climate disclosures will help to close these gaps, improving the accuracy and usability of the NZFT. In addition, this means that our tracking of trends over time combines both reduced information gaps in datasets on top of improvements in response. This creates complexities that we will seek to disaggregate and flag wherever possible in future iterations. Nevertheless, the powerful insights gained from this substantial and representative sample provide valuable indicators of progress and trends in pension funds' commitments to and implementation of net-zero initiatives.

SAMPLE STRUCTURE

This report presents analysis of a sample of 342 European pension funds, representing USD 7.8 trillion in assets managed or owned (AuM/O), roughly 15% of global pension assets. This sample includes 60 members of net zero coalitions supported by the Glasgow Financial Alliance for Net Zero (GFANZ; USD 2.8 trillion): the Net Zero Asset Managers Initiative (NZAM), the Net Zero Asset Owner Alliance (NZAOA), and the Paris Aligned Asset Owners (PAAO) group. The remaining 282 tracked entities (representing USD 5 trillion AuM/O) that are not alliance are a subset of 500 entities from a list of top 1,000 European pension funds,[4] prioritized by AuM/O and data availability. We excluded from the analysis 158 entities, representing 15% of the total AuM/O of European pension funds. Specifically:

- 130 entities for which we could not find data in the 50 secondary data sources that we use, despite the availability of their ESG, sustainability, transition, or similar reports. We excluded these due to insufficient processing capability to accurately identify and evaluate their net zero response, noting that a badge of "No action" would not be reflective of their potential response.
- 28 corporate pension trusts for which no trustee could be identified. Since a pension trust is not a legal entity on its own—rather, it is managed through a legal agreement—we need to identify the trustee (usually a corporate trustee) in order to track the trust's net zero actions.

4 The list includes both **financial institutions**, and **real-economy companies (corporates)** with large pension schemes. For the latter, we sought to identify either their fund entity name or the name of the trustee of these corporates and discarded those companies for which this was not possible. This represents about 91% of asset coverage in the list of top 1,000 European pension funds (IPE, 2023).

Table 1: Sample of pension funds reviewed in this study

Pension funds	Entities reviewed			Entities included in report and NZFT	
	Nr	AuM/O (USD tn)	AuM/O (%)	Nr	AuM/O (USD tn)
Net zero alliance members	60	2.8	30.7	60	2.8
Non-alliance members: Data available	91	3.4	37.4	91	3.4
Non-alliance members: No data and no reports found; assuming no reported action	191	1.6	17.6	191	1.6
Non-alliance members: No data found and insufficient processing capability to review climate reports for potential action.	130	1	11.0	0	0
Non-alliance members: Corporate pension schemes for which it was not possible to identify a trustee	28	0.3	3.3	0	0
Total	**500**	**9.1**	**100**	**342**	**7.8**

Across the study, the analysis of pension fund performance relative to the sample size (e.g., the percentage of responses in the examined sample) consistently refers to the 342 "entities included in the report", as defined above.

Location of the samples in this study: In our sample of 342 pension funds, 333 are geographically located entirely in Europe, with three countries making up more than half of the sample: United Kingdom (96), Switzerland (51), Germany (47). We also include pensions from the following counties: Netherlands (35), Denmark (18), France (15), Italy (14), Sweden (9), Poland (7), Finland (6), Norway (5), Iceland (5), Czech Republic (4), Austria (3), Belgium (3), Croatia (3), Portugal (3), Spain (2), Romania (2), Slovakia (2), Ireland (2), and Latvia (1). We also include nine pension funds from Israel (7), Kazakhstan (1), and Turkey (1), located in the broader European economic and financial sphere, taken from the 2023 Top 1,000 European Pension List compiled by Investment & Pensions Europe (IPE).[5]

Various levels of analyses have been used to identify and assess the actions of pension funds based on AuM/O, as shown in Table 2.

5 IPE qualifies these countries as part of the broader European economic and financial sphere; these nine entities account for only 3.5% of the total AuM/O in our sample, having a minimal impact on the overall European context assessment.

Table 2: Depth of assessment of pension funds in this study

Pension funds	Entities analyzed	AuM/O (USD tn)	AuM/O (%)	Depth of assessment
Top 15 European pension funds (by AuM/O)	15	3.2	41.0	Secondary data and manually retrieved primary data from climate reports
Next top 45 European pension funds (by AuM/O)	38	2.4	30.8	Secondary data and primary data extracted from climate reports using LLMs,[6] checked for false positives and negatives
Other European pension funds	289	2.2	28.2	Secondary data only
Total	**342**	**7.8**	**100**	

REPORT STRUCTURE

The report is structured in three sections:

1. **Targets, implementation, and main drivers** provides a comprehensive **assessment of pension funds' progress on net-zero commitments.** It does so by examining emissions and investment goals and how they translate into climate actions and responses and impacts on the ground. Focusing on how pension funds are materially contributing to the reduction or increase of emissions by directly or indirectly supporting the deployment of new climate solutions and by reducing the deployment of high-emissions assets.
2. **Current drivers of net-zero action** examines the main **regulatory and structural drivers** that encourage observed progress, such as net-zero coalitions and regulatory reform.
3. **Challenges and potential actions** introduces the main **challenges faced by pension funds**, and highlights actions—the levers and good practices pensions funds have or are adopting which we have gathered through the research (interviews with practitioners and extensive literature review).

6 LLM stands for large language models.

1. TARGETS, IMPLEMENTATION, AND THEIR MAIN DRIVERS

1.1 TARGET TRENDS

European pension funds have communicated a strong commitment to sustainable investing in recent surveys (GSAM, 2023). Our study confirms a positive shift in commitment to target setting from 2019 to 2023, with mitigation targets being the most common, followed by fossil fuel related goals, and climate investment targets.

Strong and credible **targets** are a fundamental first step toward the integration of climate considerations into pension funds' investment decisions.

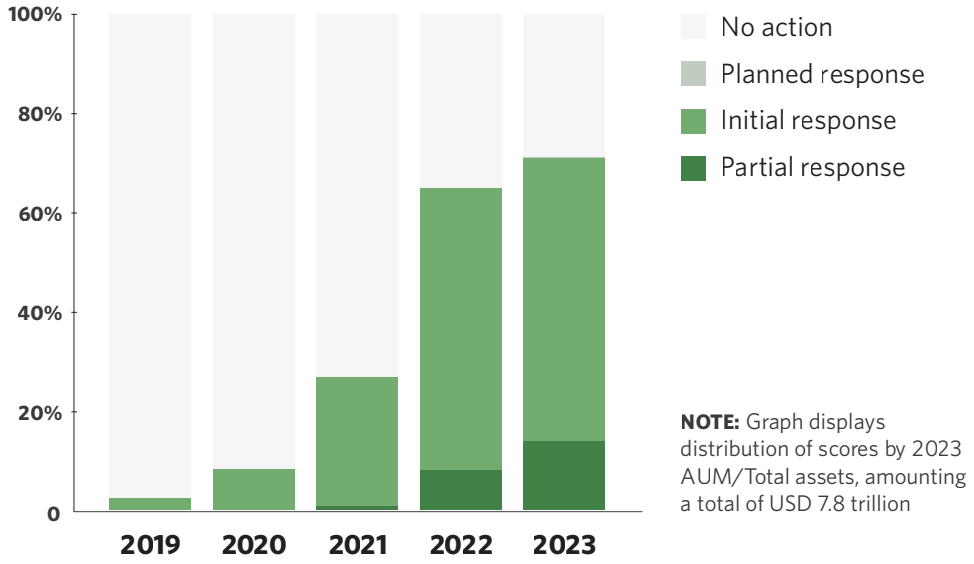
The number of pension funds to have adopted some form of target has grown from four (1% of our sample)[7] in 2019 to 98 (29%) in 2023, now representing more than USD 5.5 trillion (70%) in terms of assets under management or owned (AuM/O). Eleven pension funds (4%) had adopted multiple sets of well-developed mitigation or operational goals by 2023,[8] representing about USD 1.1 trillion of AuM/O (14%).

Pension funds without targets continue to pose a concern, given that surveys show that only 30% of these anticipate adopting targets in coming years (PLSA, 2023).

7 Unless otherwise stated, all percentages shown in brackets refer to the proportion of the total sample European pension funds analyzed in this report. Depending on the numeric value discussed, we measure sample size using 1) Numeric size of the sample (342 institutions), or the size of AuM/O managed by the sample (USD 7.8 trillion).

8 The NZFT classes such action as a Partial Response or above for this indicator.

Figure 2: Distribution of overall target score by % of AuM/O[9]



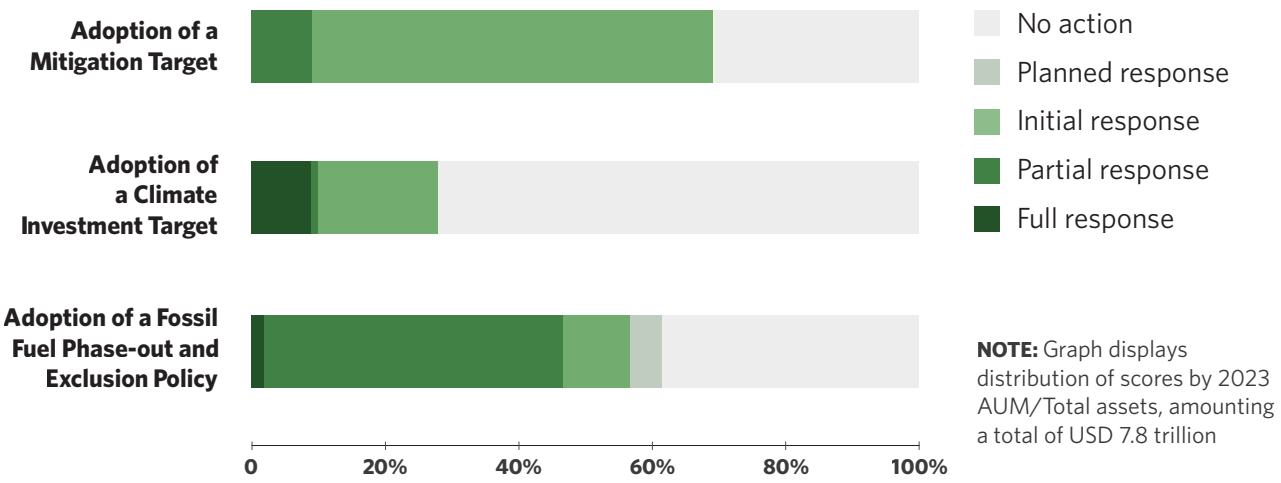
When looking more specifically at the types of commitments, three categories of targets are identified in this study:[10]

- Adoption of mitigation targets.
- Adoption of climate investment targets.
- Adoption of a fossil fuel phase-out and exclusion target.

Most pension funds in our sample are progressing in the adoption of broad **net-zero emissions mitigation targets**, which remain the most common form of commitment (The Pension Regulator, 2024). More operational goals—**climate investment targets** and **fossil fuel phase-out and exclusion targets**—follow closely in the level of adoption among sampled entities, with the latter registering higher quality responses.

9 Unless otherwise stated, all graphs display the distribution of scores by 2023 AuM/O, amounting to a total of USD 7.8 trillion.
10 See Annex 6.1 for more information on how targets are defined.

Figure 3: Level of overall response in setting targets by % of AuM/O



1.1.1 ADOPTION OF A MITIGATION TARGET

The number of pension funds in our sample to have adopted mitigation goals increased from three in 2019 to 91 in 2023 (from 1% to 27%), now accounting for over USD 5.4 trillion (69%) of AuM/O. This has been driven by funds' formal adoption of net-zero targets, including long-term targets (76 pension funds, or 22% of the sample), intermediate targets (75, or 22%), and other/unspecified mitigation goals (51, or 15%).[11]

However, only 15 pension funds (4%) have increased the quality of their targets beyond the Initial Response indicator, representing over USD 704 billion (9%) of AuM/O. Actions required for an entity to achieve a Partial or Full Response include assessing both long-term (2030-2050) and near-term (2025-2030) mitigation targets and specifying the portion of their investment portfolio covered. Most of the limited progress seen to date has been driven by transparent disclosures of scenarios[12] or methodology[13] used to develop these targets (15, or 4%)—with initiatives such as the PAAO and NZAM offering structured methodologies and guidelines for that—and an increase in pension funds reporting the range of assets covered in their mitigation targets (9, or 3%). Those pension funds that share information on portfolio coverage currently cover an average of 45% of their portfolio.

To further improve the quality of their mitigation targets, pension funds should seek independent external validation of their long- and near-term targets.[14] Additionally, pension funds need to ensure that their targets cover their entire portfolios. Currently, only a limited number of entities have achieved full coverage across all asset classes. This may be mainly due to limited data availability (see Section 3.1.5) and financial institutions prioritizing the highest-emitting sectors in their portfolios. The adoption of effective interim milestones should also be scaled up to encourage early action.

11 A long-term target is defined as a mitigation target to be attained by 2050. Intermediate targets are those to be attained by 2030 at latest. Some pension funds have adopted both long-term and intermediate mitigation targets. Other mitigation targets might include, for example, the reduction of methane emissions and increasing low-carbon energy use.
12 Climate-related projections, such as different temperature pathways or emissions reduction models (e.g., 1.5°C or 2°C pathways).
13 Specific frameworks, tools, or approaches pension funds use to assess and set their targets.
14 External validation of mitigation targets can be done by third-party initiatives such as SBTi.

1.1.2 ADOPTION OF A CLIMATE INVESTMENT TARGET

Reported climate investment commitments for 2023 amount to USD 75 billion, more than double the USD 32 billion recorded in 2022. The number of pension funds with a climate investment target has increased from none in 2019 to 35 (10%) in 2023, representing USD 2.2 trillion (28%) in terms of AuM/O. However, only three funds are publicly disclosing such goals.[15,16]

Most funds have no specific target allocation for climate investment, as also found by other surveys (OECD, 2023). Most financial institutions use proportion-based metrics (e.g., percentages of AuM, fund allocations, or revenue streams) for their climate targets, prioritizing listed equities and corporate fixed income,[17] followed by absolute metrics disclosing a specific sum dedicated to climate solutions (PAAO, 2024).

1.1.3 ADOPTION OF A FOSSIL-FUEL PHASE-OUT AND EXCLUSION POLICY

There has also been a significant rise in the number of pension funds adopting fossil fuel related goals, from two in 2019 to 60 (18%) in 2023, accounting for almost USD 4.4 trillion in AuM/O (56%). Many entities are strengthening their goals, with 39 funds (11%) including partial or undefined fossil fuel exclusion or phase-out policies.[18]These funds cover more than USD 3.6 trillion in AuM/O (47%). This is driven by pension funds announcing a fossil fuel exclusion policy (38, or 11%), committing to reducing fossil fuel investments (9, or 3%), or adopting divestment policies (25, or 7%).

Despite this positive trend, 272 pension funds (80%) have shown no response on this indicator, representing USD 3 trillion of AuM/O (39%).

It is critical to scale up efforts particularly on fossil fuel phase-out measures as they directly impact the real economy by reducing carbon emissions and fostering a transition to renewable energy. This measure is increasingly recognized as a primary driver of positive environmental impact and aligns with broader global goals for carbon reduction and climate resilience. Continued efforts to expand and enforce comprehensive fossil fuel phase-out policies across more pension funds will be essential for accelerating these sustainability goals and mitigating climate risks effectively.

15 The NZFT classes such action as a Partial Response or above for this indicator, as shown in Figure 3.
16 The largest recorded commitment is from ABP, pledging USD 32 billion by 2030 for the climate transition, with one-third to be directed into impact investments.
17 The equities and corporate fixed income asset classes have more established methodologies to track climate-related investments than others such as sovereign bonds, infrastructure and private equity.
18 The NZFT classes such action as a Partial Response or above for this indicator.

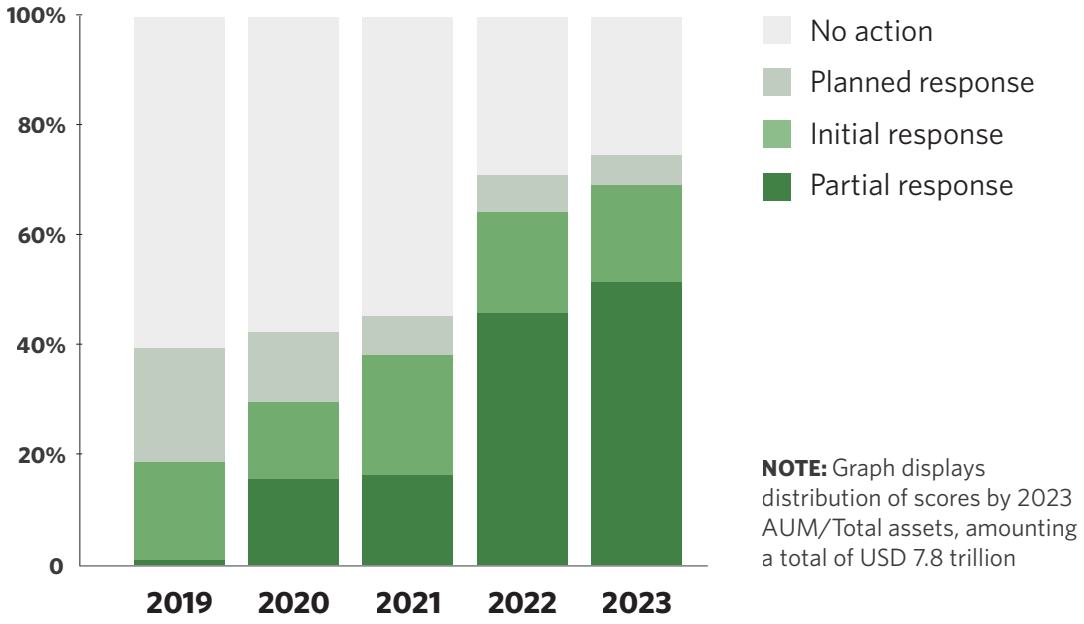
1.2 IMPLEMENTATION TRENDS

Transparency and accountability are essential to tracking progress on commitments. Given the increasing share of pension funds with publicly available climate action or transition plans in 2023, our study confirmed progress in the adoption of measures to reach the targets set, particularly in the management and disclosure of climate risks.

Once targets are set, it is important to assess whether **implementation actions** follow, and how climate considerations are factored into the decision-making process.

The number of funds to have taken implementation action grew from 26 (8%) in 2019 to 100 (29%) in 2023, representing USD 5.4 trillion (71%) of AuM/O. Moreover, the number of funds that deployed a majority of well-developed systems for climate risk management, personnel incentives, engagement, and reporting[19] has also increased from two (0.5%) in 2019 to 43 (13%) in 2023, now representing USD 3.5 trillion (52%) in AuM/O.

Figure 4: Distribution of overall implementation score by % of AuM/O



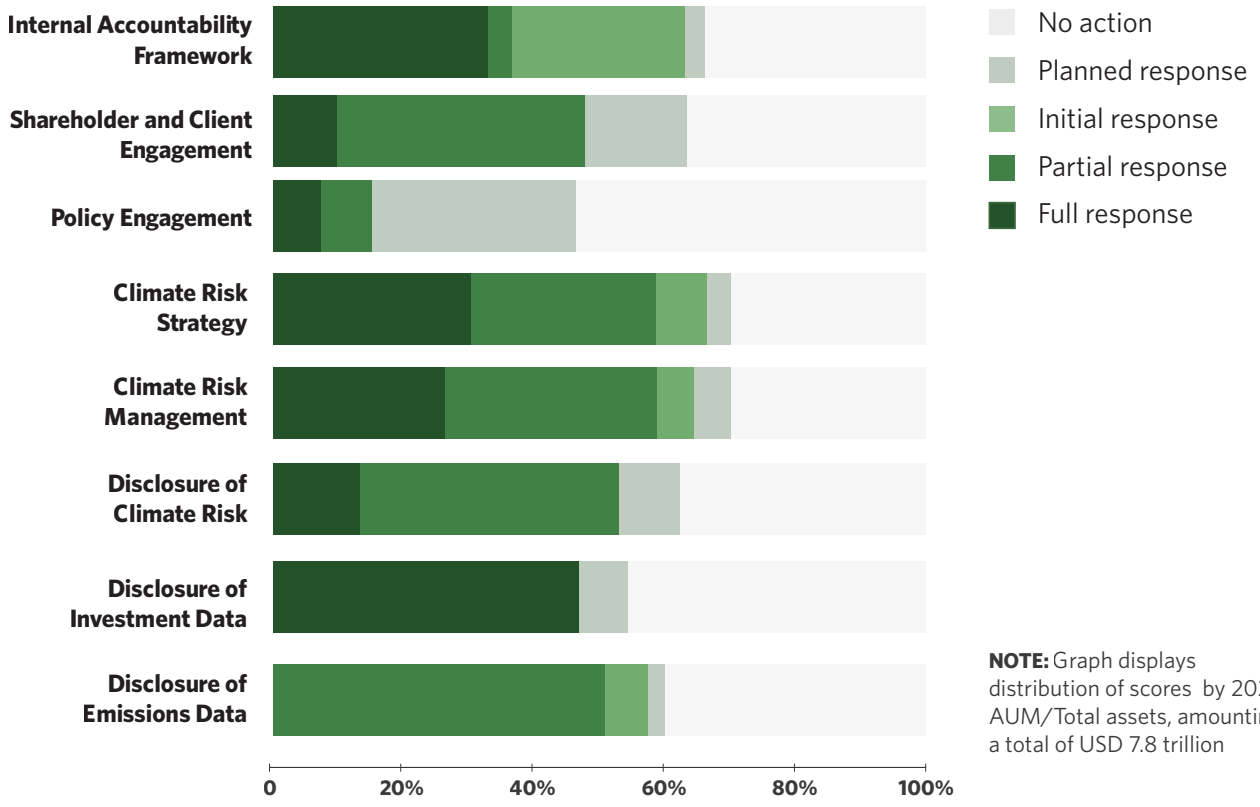
19 The NZFT classes such action as a Partial Response or above for this indicator.

The following eight types of implementation actions are considered in this study, with definitions provided in the Annex:

- Internal Accountability Frameworks
- Shareholder and Client Engagement
- Policy Engagement
- Climate Risk Strategy
- Climate Risk Management
- Disclosure of Climate Risk
- Disclosure of Investment data
- Disclosure of Emissions Data

The most developed Implementation responses reflect the uptake of TCFD climate risk disclosure guidelines. Action largely focuses on climate risk response and the adoption of related systems for disclosure and reporting. The most developed implementation responses have been observed for climate risk management and strategy, as well as disclosure systems for climate risks, emission data, and investment data, with improvements also in the level of quality of response.

Figure 5: Distribution of overall implementation score by % of AuM/O, 2023



NOTE: Graph displays distribution of scores by 2023 AUM/Total assets, amounting a total of USD 7.8 trillion

1.2.1 CLIMATE RISK STRATEGY

The number of pension funds strengthening their response on **Climate Risk Strategies** by incorporating them into their planning and showing a degree of transparency in the use of scenario[20] increased from 12 (4%) in 2019 to 67 (20%) in 2023, representing USD 4.6 trillion (59%) in AuM/O.

More specifically, progress was driven by the integration of climate risks and opportunities in strategy or financial planning (47 pension funds, or 14% of the sample), adoption of processes to assess climate risks (36, or 11%) and/or use of reputable physical climate risk scenarios (16, or 5%).

1.2.2 CLIMATE RISK MANAGEMENT

We see a similar positive trend for Climate Risk Management. The number of pension funds that evaluated and managed climate-related risks with the support of tools,[20] increased from 2 (0.5%) in 2019 to 60 (18%) in 2023—representing USD 4.5 trillion (58%) of AuM/O. Improvements were observed in the use of climate-related tools to manage risk (44, or 13%) and the disclosure of the coverage of the use of such tools (38, or 11%), with 21 (6%) covering most assets or all assets.

1.2.3 DISCLOSURE OF CLIMATE RISK

More pension funds are also acting on Disclosure of Climate Risk, by publishing disclosures aligned with the Taskforce on Climate-related Disclosures (TCFD), or by urging external managers and/or service providers to do so. The number taking such action increased from two (0.5%) in 2019 to 56 (16%) in 2023, or USD 4.1 trillion (53%) in terms of AuM/O tassets. There has been robust growth in the past two years, driven by the publication of TCFD disclosures (55, or 16%) and commitment towards TCFD reporting (65, 19%) among our sample.

1.2.4 DISCLOSURE OF EMISSIONS DATA

We also see more Disclosure of Emissions Data with an increase in portfolio emissions being (partly) tracked or disclosed.[20] The number of entities acting on this has risen from nine (2.6%) in 2019 to 45 (13%) in 2023, now accounting for USD 3.9 trillion (51%) of AuM/O. Key actions include increased tracking of financed/portfolio emissions (43, or 13%) and related disclosure (29, or 9%). In addition, 40 (12%) have expanded the coverage of their portfolios for which they report emissions data, though most funds still seem to track a minority of their assets. Third-party verification for disclosed emissions remains rare, even among pension funds that publicly disclose this data.

20 The NZFT classes such action as a Partial Response or above for this indicator.

1.2.5 DISCLOSURE OF INVESTMENT DATA

There was also **an increase in Disclosure of Investment Data**, including evidence of a reporting system for climate investment data from 1 (0.3%) in 2019 to 33 (10%) in 2023, reaching almost USD 3.7 trillion (47%) of AuM/O.

1.2.6 SHAREHOLDER AND CLIENT ENGAGEMENT

Stewardship and proxy voting is considered one of the most impactful decarbonization approaches among pension funds (Amundi, 2023). The number of funds showing evidence of general positive engagement along with no evidence of negative engagement[21,22] increased marginally from seven (2%) in 2019 to 33 (10%) in 2023, accounting for over USD 3.7 trillion (48%) in AuM/O. This modest increase has been driven by engagement with investees on transparency requirements (27, or 8%), and voting or engagement to drive investees' climate-related behavior (19, 6%).

Funds collaborate with asset managers on shareholder engagement, or delegate this activity to them completely, with only a small share engaging directly with corporates (PAAO, 2024). In addition, there is little evidence of pension funds voting in AGMs or asking portfolio companies to align with the Paris Agreement (e.g., discussions on encouraging emissions cuts).

1.2.7 INTERNAL ACCOUNTABILITY FRAMEWORKS

Pension funds have shown steady progress in adopting robust Internal Accountability Frameworks, where a strong response includes having dedicated climate staff and clear organizational accountability for climate change.[23] The number increased from 8 (2.5%) in 2019 to 29 (8.5%) in 2023, accounting for almost USD 2.8 trillion (36%) of AuM/O. The score is primarily marked by hires of dedicated responsible investment staff (29, 8.5%) and accountability on climate change for board/chief-level staff (26, 8%).

1.2.8 POLICY ENGAGEMENT

Pension funds have shown some progress in **Policy Engagement** from 2019 to 2023. The number of pension funds marking a Partial or Full Response for this indicator increased from two (0.6%) in 2019 to 21 (6%) in 2023, accounting for over USD 1.2 trillion (15%) in AuM/O. This increase was driven by entities positioning themselves in favor of climate/sustainable government reforms and regulations (18, or 5%), and in favor of specific financial regulation, including the use of reporting standards and taxonomies, as well as prudential regulation (14, 4%) and their commitment to work with governments on Net Zero transition (13, 4%).

However, most pension funds remain committed to engaging only without visible direct action. Advocating for specific financial regulations such as reporting standards and taxonomies, alongside prudential regulations, can be challenging due to their technical complexity and potential impact on operational frameworks. These regulations require substantial adjustments in reporting practices and risk management strategies, which can be resource-intensive and

21 An example of negative engagement is active opposition to climate-related resolutions.
22 The NZFT classes such action as a Partial Response or above for this indicator.
23 The NZFT classes such action as a Partial Response or above for this indicator.

time-consuming to adopt. Thus, while pension funds may express initial support, implementation hurdles can hinder their action. Further, like Shareholder Engagement, Policy advocacy is often outsourced to asset managers or leverage channels for collective advocacy, such as the Investor Agenda Global Investor Statement, where pension funds could step up and take more responsibility. Direct input is primarily provided via public consultations and often targets pension funds' home jurisdictions (PAAO, 2024).

1.3 IMPACT TRENDS

Pension funds rarely engage in direct project-level investments, requiring major shifts in practices to scale up. They can achieve significant impact indirectly through investments in funds or corporations, though this is often fragmented. Greater influence can be attained by enhancing their engagement with asset managers, who play a crucial role in the financial system, beyond assets owned.

While targets and implementation actions are not yet having a significant impact on decarbonization in the real economy, they are nonetheless an essential foundation for financial entities' net-zero progress. Coalitions acknowledge this, with a majority of pension funds feeling that their fund has made significant progress in the transition to a net-zero society (PLSA, 2023).

While the previous section covers actions implemented by European pension funds to transition to Net Zero, this section focuses on the **impacts** such actions produce on the real economy. Unlike targets, which are prospective, or implementation, which is ongoing, the impact section is retrospective, measuring what has already occurred.

To examine the current efforts of European pension funds, we looked into the amount of financing going to the construction and deployment of **new fossil fuel[24] or clean energy[25] physical assets.** Both aspects are critical to achieving net zero; while clean energy investment can reduce emissions, financing new fossil fuel power plants can lock them in for decades to come. Focusing on new assets, shifts the emphasis from the ownership of existing assets (e.g., coal plants, wind farms) to investment decisions that actively reshape the energy system through

24 Category includes Oil and Gas Supply Chain, Coal mining, Oil-Powered Energy Production, Gas-Powered Energy Production, Coal-Powered Energy Production. Tracked financing flows generally focus on the construction of new fossil fuel capacity but may include new infrastructure with unspecified purpose that may constitute transition finance.
25 Category includes Biofuel/Biomass, Hydroelectric Energy, Solar Energy, Wind Energy, Waste-to-Energy, Power Grids, Nuclear Energy, Carbon Capture and Storage, Energy Storage, Other Climate Solutions

the deployment of new infrastructure.[26] Our clean energy and fossil fuel dataset[27] and analysis encompass asset-level capex financing, including project-level debt and equity (e.g. project-financing but also bonds when these are explicitly tied to on-the-ground deployment of new infrastructure), and balance sheet financing. As a result, it does not capture other flows such as operational costs, debt servicing costs, pre-development costs, or R&D expenditures.

Further, we focus not only on the new projects that financial institutions are financing **directly** but also on those **indirectly** enabled through shareholder engagement and corporate lending.[28]

As our ability to track real economy impacts is evolving, this report provides an initial and partial overview of this, given the limitation in accessing the necessary granular data.

1.3.1 DIRECT PROJECT-LEVEL INVESTMENT

Tracked instances of pension funds' direct project-level investment are rare. While scaling up direct investment could support funds' more engaged and active approach to decarbonization, this may require significant changes to current investment practices.

Infrastructure financing represents only a small share of tracked pension funds' overall AuM (around 3%). In addition, only a small share of their infrastructure investment is in new projects, with the majority representing purchases of existing facilities (OECD, 2024). Our data confirms this trend showing just a few instances of European pension funds directly investing in new clean energy projects in recent years, for a total of USD 230 million, primarily in solar and wind.[29]

This investment demonstrates the potential for pension funds to assume a more active role in financing clean energy projects. However, scaling this up would mark a significant shift in their practices as the long-term, illiquid nature of energy project investments can conflict with pension funds' need to maintain liquidity for regular benefit payments. Further, direct project investments often require specialized knowledge that pension funds may lack in-house.

As a result, pension funds, mostly invest through intermediary funds, favoring more diversified, professionally managed investment funds (39%) and traditional debt securities (28%) over direct project investment (ECB, 2024a).

1.3.2 INDIRECT PROJECT-LEVEL INVESTMENT

Pension funds can achieve a more significant impact on new project deployment of new projects indirectly, via their investment in funds or large corporations, though their ownership is often fragmented into small shares of equity and debt.

26 This approach provides a more accurate measure of how the financial system influences and transforms the real economy, than the ownership of existing assets (e.g., in a portfolio) that have been already financed. By concentrating on the delta—i.e., the change in asset deployment—we can better assess the impact of capital flows on driving the energy transition and decarbonization efforts by contributing to the marginal addition (or reduction) of emissions.

27 Our dataset is compiled from multiple sources tracking transaction level data including: BNEF, fDi Intelligence, IJ Global, PPI, GCPFT, and GOGET.

28 Our method starts with individual energy projects and traces the investment chain upwards, meaning we first identify the direct investors in each project, then determine which funds or entities have invested in those direct investors. The approach allows to understand the links between financial institutions and all asset-level financing (e.g., corporate-level balance sheet financing is weighted and allocated to the tracked financial institutions based on their equity and debt positions in the direct investors' capital structure). This allows us to keep the focus on real economy asset deployments (e.g., real-world impacts), while improving the transparency on the indirect role financial institutions had in such funding. For more information on the attribution methodology please see CPI (2024c).

29 For example, in 2020, Finland's Ilmarinen Pension Fund invested USD 50.7 million in a wind farm in Texas, representing 11% of the project's USD 450 million total funding (Taaleri Press Release, 2020).

The number of projects impacted by pension funds is significant. **In 2023, European pension funds in our sample had indirect equity and debt ownership in more than 1,000 new clean energy and fossil fuel projects, with a total value of USD 331 billion**, showing the breadth of their potential influence on energy-related investments.[30]

However, only USD 12.5 million in new energy investment can be indirectly attributed to European pension funds in our sample in 2023, when ownership shares and additionality are factored in. The overall amounts attributed to pension funds are noticeably low because they tend to hold small ownership stakes in financial institutions or corporates and are often removed by multiple layers of ownership from the real economy asset. This results in smaller shares of project-level investments being attributed, especially when compared to their total AuM/O.[31] Other factors influencing attributed amounts include incomplete data and disclosure,[32] and transfer of legal ownership to asset managers in the context of investment management agreements.[33]

The majority of investments indirectly supported by European pension funds were enabled via equity ownership in universal banks, asset managers, and insurance companies, which in turn financed these assets.

When looking into indirectly enabled energy investment, European pension funds' clean energy investment rates are currently below observed global averages. Among financing indirectly supported by European funds, 43% is going toward new fossil fuel capacity, and 57% represents new clean energy projects, leading to a 1.3:1 clean energy ratio, below the observed (preliminary) global average of 2.2:1 for 2023,[34] meaning that European pension funds can do more to improve their current investment practices. In the clean energy category, pension funds in our sample are indirectly backing renewable energy projects, including wind power, solar energy, and hydropower, alongside emerging technologies such as energy storage, hydrogen from renewables, and hydrogen fuel cells. We also observe investments in supporting infrastructure for renewable energy (e.g., smart grids and off-grid solutions). In the high-emissions category, there are indirect investments in both the supply chain and infrastructure around coal, oil, and gas. The investments are mainly concentrated in Europe and Central Asia (68%), which may be expected given that the pension funds in our dataset are based in Europe. Developing countries received 19% of indirect energy investment tracked.

30 Projects found with pension funds' largest indirect participation include:
- The USD 5 billion Polski Koncern Baltic Sea Offshore Wind Farm in Poland
- The 600 million Ostroleka CCGT Power Plant (745MW) in Poland
- The USD 530 million PGE Sustainability-linked Loan to support renewable energy generation in Poland
- Hywind Tampen Floating Offshore Wind Park (88MW) in Norway.

31 The average ownership stakes of pension funds in financial institutions or corporates that invested clean energy and fossil fuel projects tracked for 2023 corresponds to 0.15%. In addition, our methodology spreads attribution of new investment across multiple levels of ownership to avoid double-counting and ensure additionality in impact attribution. The rationale is that the responsibility of the investment is shared along the ownership chain, and not exclusive to a specific level of ownership.

32 Attribution is based on the assessment of equity and debt ownership shares available in the Bloomberg Terminal. Potential other reasons behind the small indirect amounts attributed include: 1) many funds (e.g., private infrastructure, private equity, and hedge funds) in which pension funds invest do not disclose all their portfolios. This will start to change, as the Sustainable Finance Disclosure Regulation (SFDR) has been put in force. The SFDR requires financial market participants, including pension funds, to make transparent disclosures, although smaller financial market participants are not required to make full disclosures. 2) Private funds do not tend to disclose the names of their investors, making it difficult to obtain complete data on pension funds' investments.

33 When assets are transferred to an asset manager, they are usually placed in custodial accounts. The asset manager operates these accounts on behalf of the pension fund and becomes the legal owner of the underlying assets, while the pension fund retains beneficial ownership rights to returns, which is often not recorded.

34 The global clean energy ratio is estimated based on observed financing for all newly funded assets in the power sector, calculated by dividing the value of clean energy assets, by the value of fossil fuel assets.

Pension funds can play an even more impactful role by expanding their engagement and raising their expectations with asset managers, extending beyond the management of pension assets alone. This is critical given the central role asset managers play in the financial system, and in indirectly driving clean energy and fossil fuel investment.

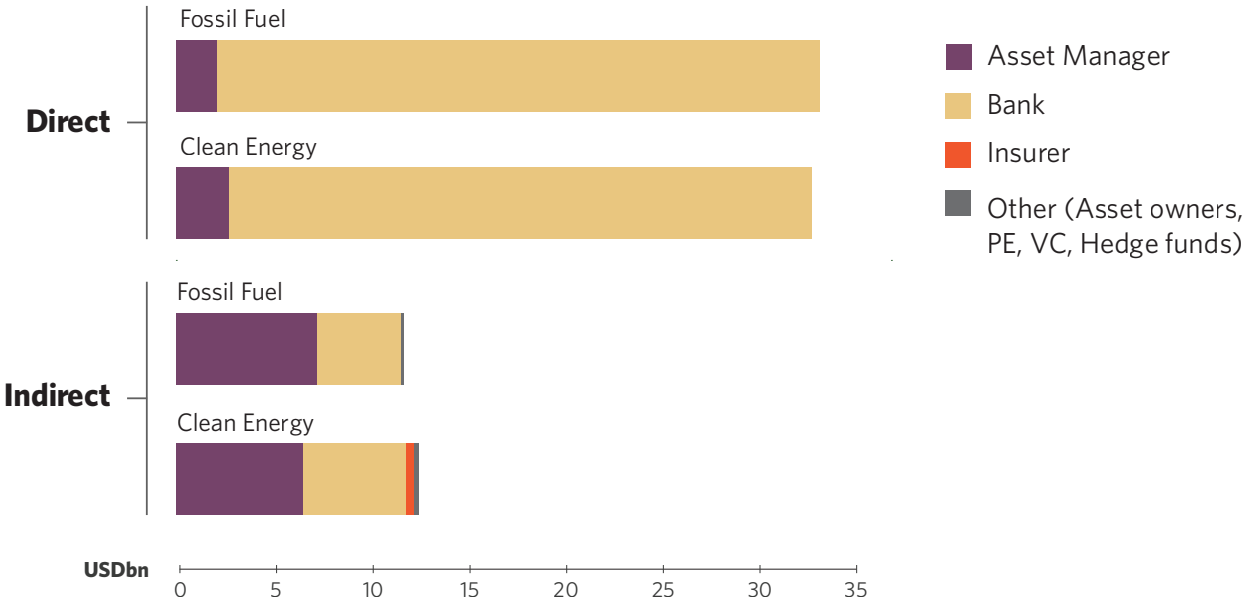
When broadening the analysis and looking beyond European Pension funds to also cover large global private financial institutions,[35] we can see that the levels of clean energy investments directly and indirectly enabled in 2023 are comparable with levels of financing to new fossil fuel projects.

Specifically, we tracked USD 33.4 billion in new fossil fuel projects and USD 32.9 billion in new clean energy projects, while institutions indirectly enabled USD 11.8 billion in new fossil fuel projects and USD 12.5 billion in new clean energy projects.

Among financial institutions, commercial banks are by far the biggest providers of direct financing to new fossil fuel and clean energy projects (96% and 94% of financing in the two sectors, respectively), mainly in the form of commercial debt.

Asset managers, however, have a major role to play as they indirectly enable most of such financing (54% of clean energy investments and 61% of fossil fuel financing), mainly through corporate lending.

Figure 6: Direct and indirectly attributed project-level financing by actor type, 2023



35 We looked at a subset of large private financial institutions (banks, asset managers, insurers, asset owners), including financial institutions that are Net Zero Alliance Members, tracked as part of the Net Zero Finance Tracker.

1.3.3 FOSSIL FUEL EXPOSURE AND ALIGNMENT METRICS

Pension funds also need to assess and manage the exposure to fossil fuel assets of investee companies and funds, particularly those that fund new fossil fuel infrastructure.

Pension funds are significantly exposed to the energy sector, amounting to around 12.7% of their corporate bond portfolios (Emambakhsh et al., 2023) and 18% of infrastructure investment in unlisted equity (OECD, 2023).It is important to manage this investment, particularly where it leads to potential exposure to transition risk from funds that are working on the expansion of fossil fuels capacity. An analysis based on the data from the Private Equity Stakeholder Project (PESP, 2024a and 2024b) shows that at least six European pension funds in our sample have invested a total of USD 327 million in funds that are significantly backing fossil fuel expansion, namely investments in liquefied natural gas (LNG).[36]

Only a few entities are reporting on portfolio alignment. In several European countries, 2023 was the first year that it was mandatory to calculate and disclose a 'portfolio alignment metric', with assessment mainly based on binary target metrics from the Science Based Targets initiative (SBTi), for example in the UK (The Pension Regulator, 2024). As a result, the portfolio alignment metric has not been used for the assessment of progress of pension funds in this year's iteration.

36 Among the known LNG projects these funds are involved in are: Freeport LNG, Calcasieu Pass LNG, Port Arthur LNG, and Eagle LNG. with potentially more undisclosed.

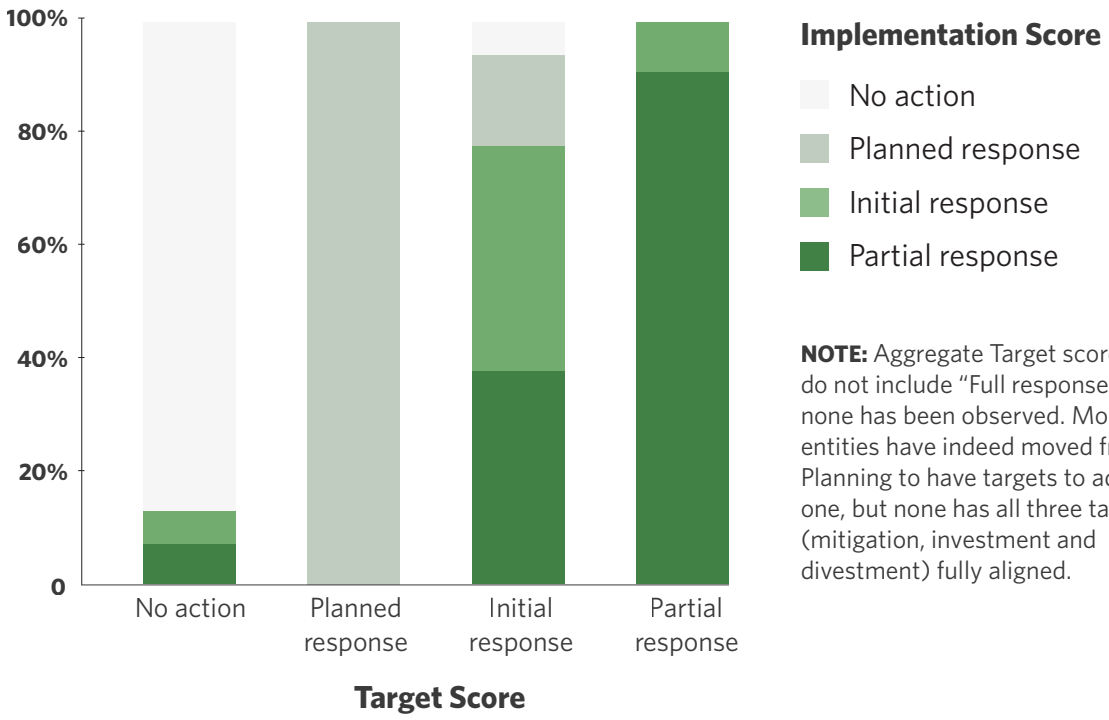
2. CURRENT DRIVERS OF NET-ZERO ACTION

After examining the trends shaping the net zero commitments and actions of pension funds, this chapter delves into the diverse combination of both external and internal drivers that are influencing the adoption of net zero strategies.

2.1 TARGETS MATTER

Our analysis confirms the importance of commitments in driving action on the ground: Pension funds with strong Targets in our dataset also did better on Implementation. There is a positive correspondence between Target and Implementation scores. Specifically, 11 pension funds (92%) with a Partial Response for Targets also achieved a Partial Response for Implementation. Similarly, out of 88 pension funds with an Initial Response for Targets, 69 (78%) exhibited either Partial or Initial responses in their implementation scores. This suggests that higher target-setting levels are associated with higher implementation actions, highlighting the importance of ambitious target-setting in driving effective implementation. Conversely, poor implementation correlates with weak or lacking targets.

Figure 7: Level of implementation action based on the level of target setting, 2023[37]



37 Aggregate Target scores do not include "Full response", as none was observed. Most entities have indeed moved from Planning to have targets to adopting one, but none has all three targets (mitigation, investment and fossil fuel phase out) fully aligned. Distribution of score is here done by nr of institutions.

Surveys with pension funds also show that the adoption of goals leads to some level of implementation. According to a 2023 survey by the Pensions and Lifetime Savings Association (PLSA) among its 81 UK members, almost all (90%) are targeting net-zero compliance by 2050, and most (64%) believe their fund has made significant progress in net-zero transition (PLSA, 2023). Similarly, a survey by Amundi of 158 pension plans across Asia-Pacific, Europe, and North America indicates that over 60% of those with net-zero goals are either implementing their strategies or feel they have matured in their processes, even though only 23% of them have set a clear strategy for achieving the net-zero climate goal by 2050 (Amundi, 2023).

2.2 PROGRESS LED BY LARGER FUNDS

Large pension funds have so far adopted more developed targets and implementation responses than smaller ones.

Results against the Targets indicator for 2023, show that the twelve (3.5%) pension funds with the most developed responses (Full/Partial Response) had an average size of USD 93 billion in AuM/O, while 83 (26%) pension funds with an Initial Response had an average size of USD 50 billion AuM/O. Meanwhile, the 242 (71%) pension funds with No/Planned Response had an average size of only USD 9.3 billion AuM/O.

Similarly, when looking at 2023 **Implementation response scores**, 44 (13%) pension funds with Full/Partial Response had an average size of USD 91 billion AuM/O. Meanwhile, the 54 (16%) pension funds with an Initial Response had an average size of USD 26 billion AuM/O, and 244 (71%) pension funds with No response/Planned response had an average size of only USD 9.7 billion AuM/O.

Larger pension funds often adopt better and more comprehensive climate targets. They are also more proactive and committed to adopting policies, governance, and investment strategies that align with net-zero goals. This may be due to a combination of factors including more resources for research and implementation of comprehensive climate strategies, the fact that regulatory reform tends to first target larger institutions, and higher visibility and public scrutiny. Additionally, larger pension funds may have higher exposure to systemic risks, which could further motivate them to adopt more robust climate goals to mitigate long-term climate-related risks. Conversely, smaller funds may lack the resources and motivation to make such comprehensive changes, including dedicated board-level positions for climate oversight or specialized staff, or allocate resources to climate issues.

2.3 LEGISLATION PAVES THE WAY

Regulatory development in Europe has been a key driver of progress for the finance sector in recent years, especially for institutional investors. Central banks, financial regulators and supervisors, ministries, banking associations, governments, and other non-financial institutions have been increasingly supporting green finance policymaking through the integration of standards and policy efforts and by promoting financial industry transparency and disclosure standards, with progress observed mainly in high-income countries. Over the past two decades, green disclosure policies have been the most prevalent, followed by green financial principles. Recently, green bonds have gained importance due to increased interest in environmental investments. Additionally, green prudential regulations are becoming common, driven by

climate-related stress tests led by central banks in several countries, including the UK,[38] France, and the Netherlands and increasingly expanding to pension funds.[39] European legislation is comparatively more advanced than in other countries such as Canada, the United States, and Russia (D'Orazio and Thole, 2022).

The most substantial legislative advancements in Europe have been in the areas of disclosure systems for emissions and climate risks, emissions and climate investment targets, and climate risk management and strategy.

By 2019, several major **climate-related disclosure** regimes had incorporated the TCFD recommendations into their requirements and guidance, including the Principles for Responsible Investment, the Climate Disclosure Standards Board, and CDP. More recently, around 2022, the European Parliament, and the International Sustainability Standards Board (ISSB) have drawn on the TCFD recommendations in developing proposed climate-related disclosures (TCFD, 2023).

The advancement of regulations promises to drive more comprehensive **target setting**, providing financial institutions with external pressure to set more effective climate goals. For example, the new EU's Corporate Sustainability Reporting Directive (CSRD), which entered into force in 2023 imposes higher and more detailed performance requirements on entities within its scope. The European Sustainability Reporting Standards (ESRS) mandate that GHG emission reduction targets shall at least include target values for the year 2030, and, if available, for the year 2050. From 2030, target values shall be set every five years thereafter. As a result, this will be an important driver for pension funds' next steps on target setting.

Key legislative milestones include France's pioneering Law on Energy Transition for Green Growth in 2015 and subsequent enhancements in 2019; The EU's Non-Financial Reporting Directive (2014), followed by the EU Taxonomy (published in 2020), the CSRD (proposed in 2021) and the Sustainable Finance Disclosure Regulation (2021); and The UK's Pension Schemes Act (2021), which marked a significant regulatory step for pension funds, alongside mandatory TCFD disclosures and the upcoming UK Sustainability Reporting Standards.

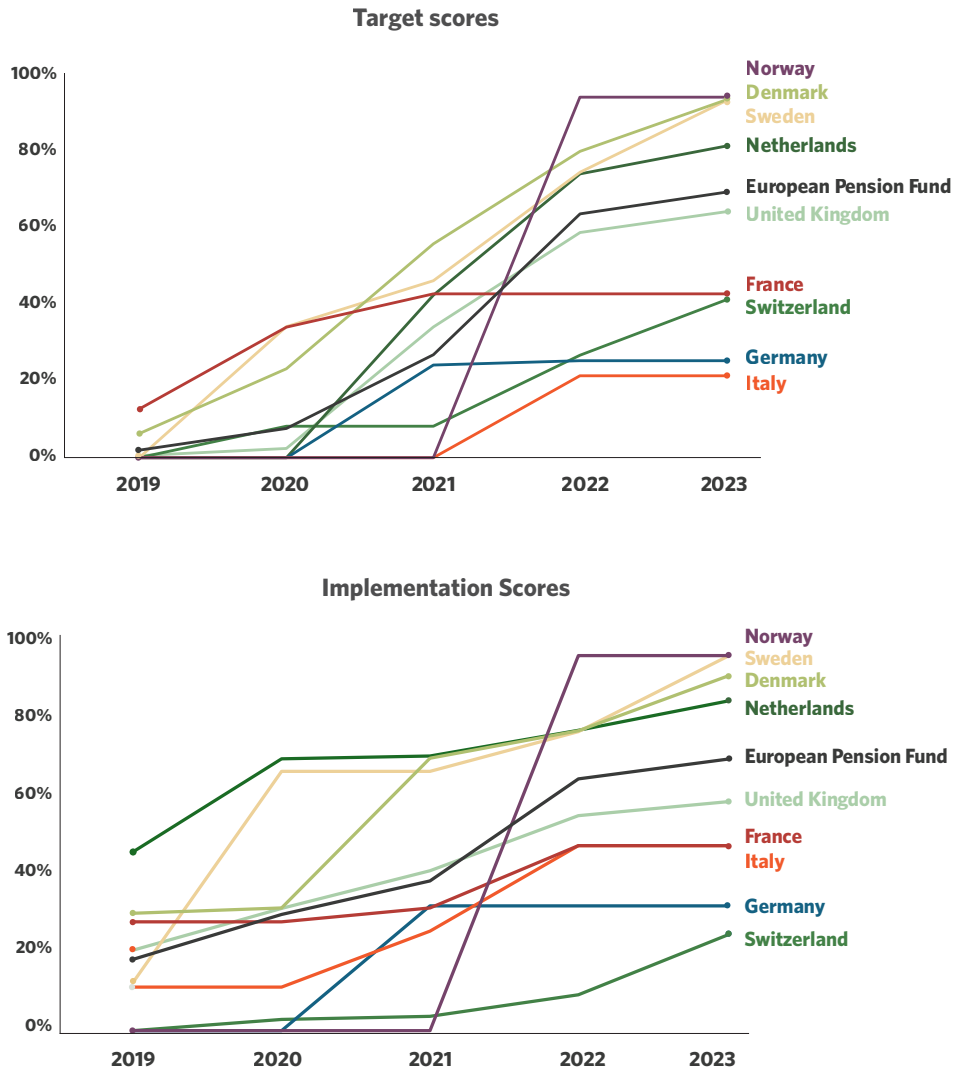
Meanwhile, we have observed significant developments in sustainability disclosure regulations across various jurisdictions. Figure 8 provides a non-exhaustive overview main regulatory developments in the period 2017–2028.

38 In the UK, the Bank of England launched its first system-wide stress test in June 2023, covering various funds, including pension funds, hedge funds, and funds managed by asset managers (Bank of England, 2023).
39 In 2022, EIOPA conducted its first climate stress test for Institutions for Occupational Retirement Provisions (IORPs) in the European Economic Area (EEA) to gain insights into the impact of climate-related risks on the pension sector (EIOPA, 2022a). The scenarios for the test were developed in collaboration with the European Systemic Risk Board and the European Central Bank (ECB) (EIOPA, 2022b).

Figure 8: Global Development in Sustainability Disclosure Regulations (2017-2028)

Figure 9 illustrates the progress in implementation and targets for pension funds in the UK (96 pension funds), Switzerland (51), Germany (47), the Netherlands (34), Denmark (18), France (14), Italy (14), Sweden (9), and Norway (5) from 2019 to 2023. These countries represent significant pension fund markets in Europe and are the largest in our dataset by number of entities.[40]

Figure 9: Top nine European countries' pension funds response as a % of AUM/owned (Initial/Partial/Full Responses)



Note: Graphs show the share of entities in our sample with Initial/Partial/Full response by 2023 AuM/O in each country examined.

While the TCFD helped early action, particularly on implementation across all jurisdictions, 2021 represented a key year for pension funds legislation and response, with the European

40 These nine countries alone contribute to almost 85% (288) of the total sample and 89% (USD 5.90 trillion) of AuM/O.

Union's Sustainable Finance Disclosure Regulation coming into effect and mandating detailed disclosures on ESG integration by financial market participants, including pension funds (European Commission, 2020b). The UK also mandated climate risk governance and disclosure for occupational pension schemes in the same year with the Pension Schemes Act 2021 (CCE, 2021; GOV.UK, 2021).

France's pioneering efforts set a precedent for integrating sustainability into financial regulations (Green Finance Platform, 2021), and French pension funds have been early leaders both for targets and implementation. In 2019, pension funds with 13% (USD 34 billion) of total AuM/O by French funds had made initial responses on targets, the highest among all countries. Similarly, 28% (USD 73 billion) of the total AuM/O by French pension funds had some level of implementation response. France was the first country to introduce legislation supporting the Paris Agreement with its Law on Energy Transition for Green Growth in 2015. This law required institutional investors, including pension funds, to report on their ecological and energy transition strategies (PRI, 2016). The French Climate and Energy Law of 2019 enhanced these requirements, including the need to disclose the portion of assets meeting EU Taxonomy criteria (Green Finance Platform, 2021).

As illustrated in Figure 9, the Nordic countries (Denmark, Norway, and Sweden) followed by the Netherlands have recently led in target setting and implementation responses, based on our tracking of all levels of action (including initial response).

The Dutch Pension Fund Code of 2014, updated in 2018, provides guidelines for responsible investment for Dutch pension funds, on transparency, accountability, and sustainability. The Dutch Climate Agreement of 2019 also includes measures for sustainable finance. In Sweden, the National Pension Insurance Funds Act of 2000 governs the Swedish National Pension Funds (AP Funds), requiring them to manage assets in a manner that promotes sustainable development. In Norway, 2022 saw the update of the ethical guidelines first introduced in 2004 for its large sovereign pension fund to strengthen its focus on sustainability and climate risk management, including divestment from companies that significantly contribute to climate change and investment in renewable energy. Denmark's recent regulatory drivers come from the 2020 Danish Climate Act, which set legally binding mitigation targets and put pressure on financial institutions, and the Financial Business Act 2021 update, including amendments strengthening ESG integration in financial practices, climate risk management, and reporting. Countries like Norway, Sweden, and the Netherlands also have large, centralized pension funds that can more easily implement comprehensive ESG strategies and influence the market towards sustainable investments by engaging in active ownership.

Uptake has been slower in Germany, Switzerland, and Italy. As of 2022, the Swiss Federal Council adopted an ordinance on climate disclosures for large public companies and financial institutions (banks and insurance companies), effective only from 2024, asked to follow TCFD recommendations. However, this ordinance does not explicitly include pension funds, highlighting a gap in Switzerland's regulatory framework for climate-related financial disclosures (Federal Council, 2022). Germany and Italy have instead been slow in integrating EU regulation, as their pension funds, especially occupational pension schemes, are often smaller and more fragmented compared to the large, centralized funds in Denmark or Norway, making it harder to implement cohesive, large-scale ESG strategies.

In the coming years, we anticipate continued progress driven by disclosure regulations. The CSRD will start to apply to large public-interest companies in 2024, listed small and medium

enterprises (SMEs) and small non-complex financial institutions in 2026, and non-EU companies with significant EU operations by 2028, (Sustainalytics, 2023) with pension funds also potentially affected.[41] Similarly, in the UK, the government plans to decide on adopting IFRS 1/2 by early 2025, integrating them into a broader Sustainability Disclosure Reporting framework (Gov.UK, 2024). The UK Green Taxonomy is also launching a consultation within 2024.

2.4 COALITIONS BOOST AMBITION

Pension funds that are part of a net-zero coalition have been leading the transition. In 2023, pension funds that were part of such a coalition were over six times more likely to have adopted a climate target and five times more likely to have adopted implementation actions. While this suggests a correlation between coalition membership and climate actions—and coalitions often provide structured pathways for setting targets, monitoring progress, and implementing actions aligned with decarbonization—other factors may be at play that can potentially reverse the causality. For example, pension funds that are already more committed to sustainability—due to internal policies, stakeholder pressure, pre-existing net-zero commitments, response to regulation—might also be more likely to join a net-zero coalition, motivated by the potential benefits of recognition and credibility that come with membership, and the fact that they are already ahead in their climate action efforts.

The graph below compares the distribution of Target and Implementation scores for European pension funds that are members of coalitions against other European pension funds tracked by the NZFT.

Figure 10: Overall Target and Implementation scores for Pension funds that are Net Zero Alliance Members vs. other pension funds by % of AuM/O

41 While pension funds are not explicitly included in the CSRD, clarification from the European Commission in August 2024 (EU Commission, 2024) indicates that pension funds structured as a type of undertaking listed under CSRD, it will be subject to reporting obligations. As the CSRD's scope broadens, more pension funds will likely be impacted.

By 2023, **European pension funds affiliated with net zero alliances supported by GFANZ** (NZAOA, PAAO, and NZAM) had all set some form of target. Implementation scores tell a similar story; by 2023, 50 funds (83% of Net Zero Alliance members in our sample) had recorded some level of implementation action, encompassing USD 2.5 trillion (92%) of AuM/O, with remaining entities in the sample at minimum planning to act.

Other European pension funds have also shown developments in target setting, albeit at a much slower pace, with 40 funds having set initial targets (14% of pension funds that are not alliance members) in 2023, or USD 2.8 trillion (55%), in AuM/O. Only 49 funds (17%) were implementing climate strategies, accounting for USD 2.86 trillion (57%) of the sample's total AuM/O. **While coalitions can help to amplify the actions and promote the knowledge exchange among members, their requirements and guidance may not prove palatable for all.** Coalitions like NZAOA and PAAO provide standardized frameworks and best practices for their members to help ensure credibility and consistency in how pension funds approach their net-zero strategies. Coalitions also facilitate the sharing of successful strategies and practices, enabling funds to learn from each other, implement proven methods, and benchmark against peers. This can help funds to understand how they are performing relative to others and to identify areas for improvement.

Stricter requirements as a result of being part of a coalition, however, can sometimes discourage participation.[42]

That said, pension funds still have an individual responsibility to consider and act on Paris Alignment, regardless of coalition membership. While joining a coalition can offer structured support, guidance, and recognition, it remains essential that these decisions are led internally within each fund.

42 Two pension funds, Australia's Cbus Super and Bundespensionskasse of Austria, have quit the NZAOA and PAAO, citing a lack of resources to fulfil the membership requirements. In contrast, Danish pension fund AkademikerPension is considering leaving the asset owners' alliance "because new requirements do not attach enough strings to owning the shares and bonds of publicly listed oil and gas companies''(Reuters, 2023).

3. CHALLENGES AND POTENTIAL ACTIONS

While legislation and net-zero coalition efforts are driving change, pension funds still have significant room to improve their impacts on the real economy. This section discusses the main challenges they face, and potential actions they could take to drive change. The analysis is based on a literature review and interviews with current and former industry professionals from pension funds, asset management firms, and pension fund regulatory bodies.

3.1 CHALLENGES

Specifically, the following challenges were identified in our study:

1. Bridging the gap between pension funds' asset ownership and asset management.
2. Transitioning passively managed investment to net zero.
3. Scaling up investment in climate solutions, particularly in EMDEs.
4. Creating greater real-economy impact by broadening focus beyond own assets.
5. Improving data and methodologies.

1. BRIDGING THE GAP BETWEEN PENSION FUNDS' ASSET OWNERSHIP AND ASSET MANAGEMENT.

Individual members of pension funds (contributors, retired members, etc.) have **limited influence over funds' investment principles and strategies**, especially in defined benefit schemes where these aspects are decided by the trustees and the supporting employers.

In addition, many pension funds—especially smaller ones—**delegate their sustainable investing policies, stewardship, and engagement to external asset managers** because they lack the resources and/or structure for direct voting and dialogue with investee companies (OPSC 2021). While delegation can increase the distance between ownership of assets and how they are allocated, a longer value chain does not necessarily reduce opportunities for creating net-zero impacts in the real economy. However, it requires that external managers maintain alignment with the pension fund's sustainability goals throughout the investment process.

Finally, **many of the world's largest external asset managers have seldom used shareholder voting rights effectively to respond to ecological and social crises.** While some managers have shown more progressive voting practices, overall, voting rights have not been fully utilized. Additionally, asset managers have historically been reluctant to allow asset owners direct influence over voting, however, more recently, pass-through voting is becoming more common in which asset managers such as BlackRock are giving clients a direct say in resolutions (ShareAction, 2024), though this poses some risks (see Section 3.2.4).

2. TRANSITIONING PASSIVELY MANAGED INVESTMENT TO NET ZERO.

Globally, passive investments by pension funds have increased. In Europe, data shows that many pension funds favor passive investing, where they buy and hold a diversified mix of assets to match an index. Between 2008 and 2022, the share of investment fund holdings by pension funds increased from 23% to 46% of their total assets (Pensions Europe, 2022). This presents the major challenge of transitioning passive funds to Paris-aligned benchmarks.

Even when factoring in climate, passively managed funds may still see **conflicts** between climate-factor tilts and value-factor investment benchmarks (PAAO, 2023). Underlying **benchmarked** indexes are often exclusively driven by diversification and value factors and used as the base/comparator/counterfactual in the development of funds, including climate funds and non-passive funds.

3. SCALING UP INVESTMENT IN CLIMATE SOLUTIONS, PARTICULARLY IN EMDES.

Together with engagement and stewardship, investment in climate solutions is considered a recommended strategy for pension funds to create impacts in the real economy, mostly focusing on infrastructure projects such as renewable energy generation (Amundi, 2023; PAAO, 2024). Investment is particularly important in emerging markets and developing economies (EMDEs), given that these regions are often where the largest increases in energy demand are expected, and where risks of locking in decades of carbon-intensive fossil fuel infrastructure are higher.

However, as discussed in Section 1.3.1, current clean energy investment levels are low, and pension funds are very unlikely to have the capacity to design innovative financing instruments to accelerate clean infrastructure investment.

In addition, even large pension funds **face barriers to investing in EMDEs**. In Section 1.3.2 we observed that 19% of new energy projects indirectly enabled in 2023 by European pension funds were in developing countries. An analysis of EU pension funds' broader investment portfolio shows that an even smaller portion of their assets (4.1%) is allocated in low- and middle-income countries (LMICs), (HLEG 2024) and these flows typically focus on publicly traded, high-quality investment assets in major developing economies.

Pension funds need to balance risk management with the pursuit of long-term investment returns. They have very limited opportunities to invest in public markets in EMDEs, as such investments are perceived as risky, they require investment structures led by proven asset managers and involve prohibitive management fees, particularly for small funds. Further, regulatory practices limit the financial exposure and commitments that even large institutions can make in EMDEs, especially in higher-risk markets and illiquid instruments (Attridge et al, 2024). **Significant changes in practices and regulations are then essential to enable and accelerate these investments.**

4. CREATING GREATER REAL-ECONOMY IMPACT BY BROADENING FOCUS BEYOND OWN ASSETS.

For meaningful real-world impact, European funds need to engage with asset managers beyond the assets they own. As observed in Section 1.3.2, most investments in new clean energy and fossil fuel assets across large financial actors is currently enabled by asset managers indirectly,

through their portfolio allocations (debt and equity) into entities that invest in these projects. The breadth of these portfolios means that even where asset managers might help pension funds to develop climate-friendly products, they may still engage in unsustainable practices for other clients, resulting in pension funds that acquired these services inadvertently contributing to an asset manager's overall bottom line that includes unsustainable practices for other clients.

Ensuring that asset managers maintain consistent and comprehensive sustainability practices across all the investments they manage is crucial for pension funds to avoid indirectly contributing to negative impacts in the real economy.

This is particularly important for US asset managers, many of which provide services to European pension funds, while operating under US legislation. In the US, the Employee Retirement Income Security Act of 1974 governs how retirement funds are managed, indicating that only material financial considerations can be factored in investment decisions, such as emerging legislation or physical climate risk, or financial institutions can be sued. These provisions significantly restrict how asset managers in the US—many of which manage assets owned by European pension funds—can approach climate, as climate considerations in investment decisions can be challenged unless they are proven to directly impact short-term financial performance.

5. IMPROVING DATA AND METHODOLOGIES

Investors are challenged by missing, inconsistent, and poor-quality data. The lack of tools, standardized methodologies, international climate finance taxonomies, and limited resources of smaller financial institutions makes it difficult to appropriately track their progress toward net-zero investment in a way that is comparable and resource-efficient, particularly for GHG portfolio emissions.

Portfolio emissions: Challenges in fully accounting for all financed emissions and variation in methodologies make pension funds' calculations both incomplete and incomparable, creating discrepancies in reported data. These challenges have concretely impacted pension funds' commitment to net-zero alliances.[43] The main issues include:

- Tracking of Scope 3 emissions of invested companies depends on accurate emissions information from suppliers, but some of those suppliers operate in jurisdictions with no mandatory reporting requirements (S&P, 2023b)
- Some asset classes have more developed methodology for emissions estimates—such as public equity. In contrast, net-zero investment guidance is at an earlier stage for other investment avenues, such as infrastructure and private equity, real estate equity funds, securitized products, and sovereign bonds.
- Obtaining and processing data is costly and complex, which adds to the difficulty in aggregating data across different asset classes and investees. (GEFI, 2021; Rempel & Gupta, 2020)
- The standards for accounting GHG emissions are still developing. Market volatility/ fluctuations influence estimates, and flexibility in current standards results in varied methodologies, which impact reliability and comparability (Granoff & Lee, 2024).

43 See Section 2.4 on the role of coalitions.

Lack of comparability of climate finance: European pension funds and financial institutions currently indicate various timeframes and scope for achieving their climate finance commitments, such as reaching certain portfolio allocations or volumes of investment in climate solutions. Further, EU taxonomies were recently finalized. As a result, financial institutions have not yet adopted harmonized definitions of green investment leading to targets and reporting that are hardly comparable (Di Maio et al., 2023; IIGCC, 2024b; OECD, 2023).

Assessing Paris alignment for a public equity and bond portfolio presents considerable challenges, particularly in obtaining trustworthy data and robust climate scenarios. This process requires a thorough knowledge of the portfolio companies and involves gathering large amounts of data from diverse sources, making it a significant and complex undertaking.

Third-party validation of net-zero targets poses challenges for some pension funds regarding access to the validation process or the robustness of the validation approach (Carbon Market Watch, 2024), are in part still under development (SBTi 2024a and 2024b). In addition, unlike emissions goals, there is no mechanism in place for the third-party validation of climate finance goals (Di Maio et al. 2023).

3.2 SUMMARY OF ACTIONS FOR EUROPEAN PENSION FUNDS AND KEY STAKEHOLDERS

As observed, regulatory action is encouraging greater response from European pension funds (see Section 2.3). This can push for the adoption of transition plans as the mechanism to bridge the gap between target-setting, effective implementation and impact, capturing opportunities, and making genuine progress toward a sustainable economy.

Table 3 provides an overview of actions that various stakeholders can implement to further enhance the effectiveness of European pension funds' Net Zero response and their impact on the real economy, addressing the challenges outlined in this report.

Table 3: Solutions and specific actions for net-zero pensions

Solution	Actions
1. Bridging the gap between pension funds' asset ownership and asset management	
Increase control of investment decision-making strategy and principles	**CSOs**: Increase citizens' influence on investment decisions, especially within Defined Contribution schemes, by building awareness on how individual members can put pressure on providers and employers. **Pension funds**: Increase member participation in shaping their responsible investment policies by establishing a member dialogue model. **Regulators:** Allow pension funds to solicit the climate preferences of their members and integrate these into investment decision-making **Governments:** Evaluate the consolidation of defined benefit schemes into a public sector superfund which could lead to stronger commitments to climate and sustainability goals.

Solution	Actions
Scale up stewardship and engagement with corporates	**Pension funds**: • Advance climate finance alignment concerns through third-party advisors / investment consultants to inform / drive broader corporate engagement • Increase the transparency of their engagement activities to increase pressure on corporates. • Employ escalation strategies with significant GHG emitters **Coalitions**: Help small pension funds pool with others to more effectively engage with corporates.
Encourage asset managers' stewardship and engagement activities with investee corporations	**Regulators**: Mandate asset managers of pension funds to report on shareholder engagement **Pension funds**: Draft voting guidelines to outline expectations for their asset managers and effectively guide proxy voting. **Coalitions**: Help small pension funds pool with other funds to more effectively influence voting via asset managers
2. Transitioning passively managed investment to net zero	
Transition passively managed investment to become Paris-aligned	**Pension funds and coalitions**: • Demand net-zero financial products and services also across the passive product arena, by exploring the feasibility of creating index-tracking portfolios that are sensitive to climate goals • Improve the environmental performance of existing funds by engaging with asset managers where there are conflicts between climate factors and value factors. **Data providers:** Evaluate the climate performance of investment vehicles.
3. Scaling up investment in climate solutions, including in EMDEs	
Support pension funds' access to financial structures for investment in clean energy infrastructure	**Governments:** Develop guidance on green funds and provide tax incentives to invest in priority areas. **DFIs:** Facilitate access to large-ticket, low-cost, long-term investment opportunities in risk-diversified portfolios. Provide greater transparency on investment performance and risk exposure. **Data providers**: Collect and share loan default information for EMDE assets and evaluate the climate performance of investment vehicles. **Pension funds**: Create demand for impact funds targeting real, measurable impact on capital allocation.
4. Expanding real economy impact beyond own assets	
Increase influence on asset managers beyond assets owned, including at the ecosystem level	**Pension funds**: Extend Asset Managers' assessment to general investment philosophy, overall sustainability practices, and management of other assets. **Coalitions**: Critical to engage systemically with policymakers, regulators and industry associations within and beyond pension funds' own jurisdictions, particularly where climate legislation is lagging.
5. Improving data and methodology for net zero metrics	
Improve assessment of portfolio emissions data and alignment, implementation of climate finance taxonomies, and third-party validation of targets.	**Data providers**: Scale up reporting efforts and platforms that can consolidate data and methods on corporate emissions, finance goals, and transition plans alignment. **Regulators**: • Mandate the adoption of stringent metrics and targets by pension funds. • Mandate the development of effective corporate transition plans and their disclosure, including detailed metrics on emissions and progress toward decarbonization. **Regulators and Coalitions**: • Standardize emission reporting frameworks • Improve and scale up the adoption of internationally accepted taxonomies. • Promote high-quality, consistent third-party assurance of critical data for decision-making.

The following paragraphs discuss the main action points by key stakeholder group.

3.2.1 PENSION FUNDS

As observed in chapter 1, pension funds must go beyond setting climate goals to adopting comprehensive strategies and implementing actions to make a tangible impact on the ground and reduce climate risks within their portfolios. There are however a few other actions they can pursue to further increase their impacts and address some of the challenges outlined.

Pension funds can increase member participation in shaping the fund's responsible investment policies through the establishment of a "**member dialogue**" model, where a diverse group of members are selected to participate in shaping. This process involves educating participants on key topics like pensions and sustainability while also facilitating workshops where members discuss their priorities and aspirations for the future and develop recommendations covering important ESG themes, such as climate, shareholder engagement, and reporting standards. The fund's leadership can then commit to incorporating these recommendations into their decision-making process, ensuring the responsible investment strategy aligns with member values and expectations.[44]

To improve the impact of their **corporate engagement**, pension funds should escalate climate actions with GHG emitters, expand their efforts with the help of third-party advisors, and increase voting transparency, using divestment as a last resort. More specifically:

- Pension funds can employ **escalation strategies**, particularly with significant GHG emitters. Escalation tools include supporting or filing shareholder resolutions pushing for improvement in climate policies, voting against "say on climate" resolutions if they are inadequate, and voting against management or against the election of company directors when climate performance is insufficient.
- To scale their engagement, pension funds can use of **third-party advisors** such as Enhanced Investment Outcomes (EOS) at Federated Hermes, or Sustainalytics. This allows pension funds to cover large portfolios of investments with hundreds of companies and achieve a broader corporate engagement.
- Being **transparent on engagement activities** is also important, particularly for smaller pension funds: pension funds can be vocal in the press on corporate practices related to climate and social issues and publish their vote in advance (e.g., 5 days).[45]
- Since voting responsibilities are often delegated to asset managers, it is beneficial for pension funds to develop clear **voting guidelines**. These guidelines should articulate the expectations for asset managers and be shared with them as an "expression of wish" (PAAO, 2023). Recently, as mentioned, pass-through voting is also becoming more common with asset managers giving clients a direct say in resolutions. This "Voting Choice" movement was introduced to extend the option of proxy voting, allowing investors to participate in the process if they choose to (BlackRock, 2024). Nonetheless, it is important to be mindful of the potential risks - and make sure that it complements/integrates and does not substitute voting guidelines - as this movement could weaken the accountability of asset managers particularly if investors lack sufficient knowledge and awareness or have insufficient resources.

44 The Pensioenfonds Detailhandel, a Dutch pension fund, implemented this model through its "deelnemersdialoog," where 50 members contributed to shaping its sustainable finance approach, leading to 49 recommendations for future investment policies (IPE, 2024)
45 For example, Norge Bank Investment Management has been very transparent in its investments in companies on both climate and governance. It started publishing its voting intention five days before the voting day, which resulted in improved success rates.

Pension funds play a key role in **creating, sustaining, and disclosing demand[46] for net-zero-aligned financial products and services, or improving their supply by collaborating with asset managers.**

- Pension funds can collaborate with asset managers and coalitions to develop passive investment products that **adjust portfolio allocations toward net-zero goals**. These adjustments may be based on various factors, such as carbon emissions (both absolute and intensity), alignment with Paris Agreement targets, green revenues, fossil fuel exposure, and other environmental and social impacts.
- Pension funds can also engage with asset managers to **improve the environmental performance** of funds where there are conflicts between climate factor tilts and value factor investment benchmarks (e.g., quality, value, size, and low volatility).[47]
- Pension funds can support demand for **impact funds**—that have traditionally more stringent impact frameworks, reporting, and engagement strategies, and lead to a real, measurable, additional impact on capital allocation.[48]

To improve their impact on the real economy beyond the assets they own, **pension funds should extend their engagement with asset managers beyond individual climate products, or the exclusive management of their own assets, to encompass the asset managers' overall investment philosophy**, sustainability practices, and management of other assets, ensuring that asset managers align with their long-term sustainability goals. Given pension funds' commercial significance and the strong interdependency with asset managers, raising climate issues as part of investment decisions can have a significant influence comparable to that of regulators.

Specifically, pension funds should conduct broad **ESG-focused due diligence** of their investment strategies alongside their financial performance due diligence where ESG factors—particularly climate-related considerations, including impacts in their broader investment portfolio, transparent emissions reporting, and active participation in Net Zero alliances—are critically examined when selecting asset managers or revising service contracts. Pension funds can implement such due diligence through various **checkpoints**, including the selection stage, where specific climate-related criteria determine the hiring or rejection of prospective asset managers, and the annual review process, which evaluates performance and execution of climate commitments, allowing for potential dismissal if these commitments are not met. Important first steps are already being taken in that sense.[49]

3.2.2 GOVERNMENTS AND REGULATORS

For regulators, it is important to ensure the stability and resilience of the financial system, mitigate systemic risks associated with climate change, protect the long-term fiduciary and

46 E.g., by adopting climate Investment targets (see Section 1.1.2 on current trends).
47 For example, with support from the investment advisor, LCP, HSBC began engaging directly with Legal & General Investment Management to understand the investment issues and to encourage the investment manager to review its processes to improve the positive climate characteristics of the Future World Fund (PAAO, 2023).
48 E.g., ABP has recently set a dedicated target on impact investing (Impact Investor, 2024).
49 A survey of asset owners across 40 countries, including 170 pension funds, finds that 32% of respondents would be "unlikely to hire a manager" who has not made a Net Zero commitment, and 48% would be "unlikely to hire a manager" who cannot report on portfolio emissions. (bfinance, 2022) CalPERS has publicly voiced disappointment with some of its asset managers' decisions to leave the Climate Action 100+ initiative, has been vocal about encouraging other asset managers, including those still part of CA100+, to remain committed. (Responsible Investor, 2024)

planetary interests of pension fund beneficiaries, and support broader national and international climate commitments.

Governments and regulators have key roles to play in encouraging the **disclosure of climate relevant information**. This can include gradually mandating:

- **Development and disclosure of corporate transition plans:** Transition plans are critical in assessing whether companies are effectively mitigating risks. Adoption and disclosure of transition plans should be mandated to improve investors' access to data needed to inform investment decisions and engagement. They should outline clear pathways and strategies for reducing emissions to ensure alignment with a low-carbon economy over the long term.
- **Disclosure of corporate-level emissions:** In light of European nations' climate goals and investors' net-zero commitments, emissions disclosure—including Scope 3 reporting—should be required under reporting standards, regardless of materiality assessments. The growing adoption of mandatory reporting is already expected to enhance corporate disclosure practices. (IIGCC, 2024b).
- **Disclosure of shareholder voting:** Legislation could be expanded to mandate that pension funds' asset managers report on their shareholder engagement policies, detailing how these have been executed. The required disclosures should cover both voting practices and the methods used to monitor the companies they invest in (Shareaction 2024).

Regulators can **support** the adoption of stricter metrics and third-party assurance systems. For example:

- Financial regulators can coordinate across European countries on the adoption of reporting standards. This includes adherence to existing **standardized frameworks**, adoption of **transparent measurement methods**, and scaling up the use of globally recognized taxonomies to uniformly monitor climate finance and transition finance flows domestically and abroad (Di Maio et al., 2023).
- Regulators can also **help to identify green funds**, by developing or strengthening guidance on investment requirements. The EU 2019 Sustainable Finance Disclosure Regulation, for example, was complemented in 2022 by detailed guidance on the classification and disclosure requirements for Article 8 and Article 9 funds. These set the standards for how financial products should integrate and disclose sustainability-related information. Currently, equivalent regulations are not uniformly implemented across European countries within the scope of our work, and the adoption of Article 8 and 9 funds has slowed in recent years (New Private Markets, 2024), particularly in certain countries (EFAMA, 2023), highlighting the need for system reform.
- Regulators can work on international mechanisms that can ensure **high-quality, reliable third-party assurance** over critical data and urge **internal audit committees** to enforce strong corporate reporting practices (Ceres, 2024).

Regulators should allow pension funds to **integrate the climate preferences of their members and beneficiaries into the investment strategy** (Attridge et al. 2024). As there may be concerns about potential conflicts with fiduciary responsibility, this action should complement and reinforce—rather than substitute—climate risk management targeting physical exposure to climate risks and broader climate transition risks.

Public sector consolidators established by the government can **consolidate under-resourced defined benefit schemes into larger public sector superfunds** which could lead to stronger commitments to climate and sustainability goals. Unlike private sector consolidators, a public sector consolidator could have the ability to adopt a mandate to prioritize public interest, and enforce policies that align with long-term environmental objectives, supported by political oversight and public accountability.

Finally, central banks' **monetary policy tools** can facilitate the supply of green debt instruments,[50] while governments can support green investment by providing **tax incentives** that can further encourage pension funds investment in climate solutions in EMDEs.[51]

3.2.3 DEVELOPMENT FINANCE INSTITUTIONS

Multilateral development banks (MDBs) and development finance institutions (DFIs) play a crucial role in directing more investments to EMDEs. They can attract institutional investors by providing **large, low-cost, long-term investment opportunities** in diversified portfolios.

Where needed, **MDBs and DFIs can help mitigate risk by taking on junior, high-risk positions, blending commercial and concessional capital,** and offering structures to shield against risks (e.g., political risk or currency risk). Additionally, they can support the scaling and replication of existing blended finance initiatives already attracting pension investment (see Table 4).

Table 4: Overview of blended finance solutions targeting institutional investors

Type	Name	Size	Geography	Technology	Source
Green bond fund	Amundi Emerging Green One (EGO) Fund	USD 1.4bn	Emerging markets	Green finance	Amundi, 2018
	Amundi BEST fund	USD 2bn	Emerging markets	Sustainable finance	Attridge et al 2024
CAT bonds	Multiple initiatives led by MDBs and DFIs (e.g. World Bank)	n/a	Low and Middle-Income markets	Climate resilience	HLEG, 2024
Debt and equity fund	Climate Investor One (CIO)	>USD 1bn	Emerging markets	Renewable energy	CFM, 2024
	Climate Investor Two (CI2)	USD 1 bn	Emerging markets	Water, sanitation, and oceans	
	InsuResilience Investment Fund (IIF)	USD 100 mn	Emerging markets	Climate resilience	IRII, 2024

50 For example, as part of the ECB's monetary policy tools aimed at maintaining price stability, its Asset Purchase Programme has included the purchase of green bonds and has given preferential treatment to green bonds in the primary market. (ECB, 2024b; ECB, 2024c).
51 For example, recent legislative changes in Brazil, particularly Law 14,801/2024, which introduced the New Infrastructure Debentures, promote new investments in priority infrastructure projects. Under this new framework, issuers receive tax benefits that allow them to reduce their Corporate Income Tax and Social Contribution on Net Profit tax base by an additional 30% of the interest paid to debenture holders. Under the previous regime of infrastructure debentures, the primary tax incentives were targeted at investors' income tax. The New Infrastructure Debentures are more advantageous for pension funds as they are not subject to income tax (Mayer Brown, 2024). Even though the tax benefits are focused on the issuer, pension funds can still benefit indirectly through improved bond issuance terms and lower investment costs.

Type	Name	Size	Geography	Technology	Source
Equity fund	Forestry and Climate Change Fund (FCCF)	USD 20 mn	Emerging markets (Latin America)	Forestry	Convergence, 2023; FCCF, 2024
	Subnational Climate Fund (SCF)	USD 750 mn	Developing countries (Latin America, Asia, Africa, Mediterranean)	Mid-sized sustainable infra projects (energy, waste and sanitation, urban, agriculture)	GCF, 2024; SCF, 2024
Debt fund	ILX Fund	USD 1bn	Emerging markets	SDG focused	ILX fund, 2024
	SDG Loan fund 1	USD 1.1 bn	EMDEs	Agribusiness, financial inclusion and renewable energy	Allianz, 2023
Fund of Funds	Emerging Market Climate Action Fund (EMCAF)	Up to EUR 500 mn	Emerging markets (Africa, Latin America, Asia)	Greenfield climate mitigation and adaptation projects	EMCAF, 2024
Guarantee	EU Guarantee for InvestEU Fund / European Fund for Strategic Investments (EFSI)	EUR 26 bn	EU regions with significant investment needs	Sustainable infrastructure	EIB, 2024

3.2.4 COALITIONS

Net zero coalitions should help—to the extent possible—to raise awareness of and fill **regulatory gaps** on data standardization and third-party verification where this is the case, by encouraging research,[52] dialogue and knowledge exchanges, especially highlighting the good practice among members, and the testing and adoption of climate progress metrics.

Coalitions should also keep supporting pension funds in their engagement with **asset managers** to produce new financial products and services, or for the improvement of the environmental performance of existing products. They can also support pension funds, particularly small pension funds, **pool with other pension funds** to more effectively engage with **corporates** and **asset managers** to influence their responses and voting practices.[53]

They are also critical to **engage systemically with policymakers, regulators and industry associations** within and beyond pension funds' own jurisdictions. This can include:

- Policy advocacy and engagement with market actors are identified by pension funds as an essential part of their climate-related activity. Compared with asset managers, pension funds are perceived as long-term, with good connections with government and industry, although most engagement remains local within pension funds' own jurisdictions.
- Coalitions can create a volume of business that can commercially require other parties to change their behavior and commitments. If the coalition leads the way, it becomes easier for

52 For example, coalitions can conduct research or commission analysis on the regulatory shifts needed for capital adequacy to support pension funds in adjusting their investment strategies and responding to new market risks and economic conditions. This work would also offer insights for regulators on necessary policy adjustments to ensure the financial system remains robust while supporting the transition to a low-carbon economy.
53 For example, the Occupational Pensions Stewardship Council—an advisory and collaborative body established by the UK government to promote stewardship—in 2021 pooled pension funds in an engagement campaign with asset managers, which kicked off at the end of 2021 and was directly supported by the Minister for Pensions and Financial Inclusion (OPSC 2021).

others to follow the path it has created. Smaller pension schemes can contribute by joining coalitions or consolidating to create a larger collective influence.

3.2.5 CIVIL SOCIETY

Civil society can enhance the influence that pension fund members have over their pension funds. In the UK, for example, the Make My Money Matter initiative raises awareness among the public on the importance of their pension as a vehicle of climate action by providing guidance to individual members on how to put pressure on pension providers and employers (Finance for the Future, 2022). Such initiatives can be replicated elsewhere to enable **individual members to impact investment decisions, particularly in defined contribution schemes**. In these schemes, individual members bear the risk and benefit of their investments, allowing them substantial influence over how their funds are allocated. Conversely, in defined benefit schemes, investment strategies are determined by trustees and the sponsoring employer, reducing the direct impact that individual members can have.

3.2.6 DATA PROVIDERS

The Net-Zero Data Public Utility (NZDPU) and SBTi have in the past years focused on improving **emissions data reporting and standardization** for financial institutions and related independent validation, although efforts are still ongoing.

Initiatives like CDP, PRI, ShareAction, are critical in enabling the availability of information on **corporate response**, services providers like MSCI and Sustainalytics, and initiatives such as the Climate Action 100+, the Transition Pathway Initiative, SBTi, and TransitionArc can support investors' alignment goals by tracking and rating environmental and climate response of real economy actors. These initiatives could be further aggregated and standardized to help inform custom portfolios[54] and the creation of benchmarks that reflect actual climate performance rather than just market capitalization.

Data providers can also help further support the assessment of the **climate impact of financial instruments**, to help inform allocation of capital of pension funds, and **collate loan default risk information** for Pension funds, to help them to get comfortable with the risk profile of EMDE assets.[55]

54 There is an industry of consultants that help assess and source investments for pension funds, evaluating corporate and asset managers, ESG/climate practices, and sustainable investment products.
55 Initiatives include, for example, the GEM database, collating information on default risk assessments from 25 development finance institutions (Attridge et al. 2024).

4. CONCLUSION

This project is the first effort to track how pension funds are progressing on their commitments and milestones on net zero. It also aims to measure their impact in the real economy through their clean energy and fossil fuel investments. Such analysis can help to identify actions that stakeholders like policymakers and financial regulators can take to enhance net zero efforts. These metrics can also help pension funds to assess the efficacy of their actions and create a baseline to track progress in future years.

There has been progress on European pension funds' commitment and action to sustainable investing from 2019 to 2023, especially on setting mitigation targets, and climate risk management and strategy. Some levers for this progress include:

- Higher levels of target-setting are associated with greater implementation efforts.
- Regulatory leadership in certain European countries.
- Membership in a net-zero coalition.

What ultimately matters is creating impact on the ground by progressing the real economy toward net zero. Given that European pension funds rarely engage in direct project-level investments, they are most likely to achieve significant impact indirectly, through their engagement with asset managers, funds or corporations.

RECOMMENDATIONS

To further scale up pension funds' impact in the real economy, we provided a set of recommendations around five key areas, as outlined in detail in Table 3 and summarized below:

Pension funds must go beyond setting climate goals by involving their members in shaping responsible investment policies and by enhancing their corporate engagement. These entities can increase their impact on investee corporations by using escalation strategies with high-emission companies, increasing voting transparency, collaborating with third-party advisors, and developing clear voting guidelines for asset managers. Pension funds can also influence the financial market by creating demand for net-zero financial products and by broadening their engagement with asset managers beyond the pension fund's assets, given the significant impact of these asset managers' broader portfolios on the real economy/

Governments and regulators play a key role by mandating the adoption and disclosure of corporate transition plans, portfolio emissions, and voting practices. They can also introduce stricter reporting standards, support public sector consolidators for pension schemes, and promote green investment through tax incentives and monetary policies.

DFIs and MDBs can help pension funds to invest in emerging markets by mitigating risks and supporting the scaling up and replication of blended finance initiatives that have successfully targeted institutional investors and pension funds.

Coalitions can support pension funds by facilitating collaboration with asset managers, helping create new financial products, and improving the environmental performance of existing ones. They can also enable smaller pension funds to pool resources and engage more effectively

with companies and policymakers. By advocating for regulatory changes and promoting best practices, coalitions can amplify their influence, particularly in policy engagement and the adoption of climate metrics.

Civil society initiatives can raise awareness of the potential of pension fund investments as tools for climate action, empowering individuals to influence their pension providers. This is especially relevant for defined contribution schemes, where individual members can have a direct impact on investment decisions.

Finally, **data providers** are critical in standardizing emissions data, tracking corporate climate responses, and supporting the development of benchmarks that reflect real climate performance. Improved data aggregation and standardization can help pension funds assess financial risks and inform climate-friendly capital allocation, particularly in emerging markets.

NEXT STEPS

We plan to update the NZFT and this deep dive into European pension funds annually as part of our ongoing commitment to tracking progress and improving transparency within the sector.

After broadly surveying the trends, levers, and challenges for European pension funds, upcoming work will focus on expanding the analysis beyond European pension funds to include funds in other OECD countries and comparing these with trends from other types of financial institutions. The analysis will also utilize new datasets and enhanced automated methods to examine information in reports, and expand data analysis on fossil fuel exposure and/or misaligned exposure, which is currently limited. Potential additional research that can complement this work—drawing from or improving its data—including deep-dive analyses of:

- **Key investor categories beyond pension funds**, targeting asset managers, insurance companies, or banks. The analysis could follow a structured approach similar to that of this report, providing detailed insights into their net zero progress, impact of the regulatory frameworks, challenges, and possible actions that can strengthen their response.
- **Policy impacts** on the specific responses of pension funds, the main regulatory gaps, and levers that further boost policy response.
- **Ownership networks**, to understand the main channels through which pension funds deploy capital in the real economy, and the specific investment and engagement levers that can deliver increased deployment of new clean energy projects, and decreased deployment of new fossil-fuel projects.
- **Existing catalytic financing instruments and structures** that are successfully attracting pension funds capital in clean energy, how they deliver impact, and how they can be scaled up and replicated to multiply climate investment opportunities.
- **Real economy impact beyond the power sector**, expanding our analysis to include other high-impact sectors, like transport.

EXPANDING PARTNERSHIPS

We are conscious of the multiple ongoing efforts to improve the integrity and accountability of private financial institutions. We are working closely with key partners including CDP, PRI, InfluenceMap, Shareaction, Asset Impact, and others, both on data provision and synthesis.

Additionally, CPI is actively engaging with prominent actors, including GFANZ, IIGCC, OECD, Ceres, Climate Arc and the World Resources Institute, on improving data quality and availability, and its effective use to inform response of the financial system. These collaborations strengthen the impact of our research and ensure alignment with global standards. We recognize that there are areas where our analysis can be improved, and we are always open to suggestions, new ideas, and additional sources of data that can further enhance our work.

Finally, we are grateful to the foundations supporting our analysis of financial institutions, primarily the Laudes Foundation and the Hewlett Foundation. CPI and our funders are committed to expanding this level of analysis to other key categories within the investor ecosystem, including but not limited to asset managers, banks, and insurers. We welcome engagement with stakeholders, including existing and potential funders, who are interested in supporting this important work.

5. ANNEX: DIMENSIONS AND INDICATORS USED IN THE STUDY

The tables below outline the dimensions and indicators used for this study. For a detailed overview of the existing frameworks used, and how badges/scoring apply to various dimensions and indicators, see the latest NZFT Methodology and Scoring Indicator Methodology (pseudocodes) (CPI, 2024b).

TARGETS

Adoption of a mitigation target	The indicator describes whether institutions have set clear and comprehensive targets for climate action (primarily reducing their emissions), whether those are quantitative targets, and whether they are disclosed transparently.
Adoption of a climate investment target	The indicator describes whether institutions have set and disclosed clear, accountable, and measurable targets to provide a volume of financial services and investments for climate action. Financing the climate solution is a critical part in financial institutions' transition plan and strategies.
Adoption of fossil fuel phase-out and exclusion targets	The indicator assesses institutions' policies with respect to fossil fuels. Three levels of goals are here considered: (1) Fossil fuel phase-out policies, referring to financing or enabling the early retirement of high-emitting physical assets; (2) Exclusion policies prohibiting new/additional investment in portfolios that do not have mitigation plans or whose activities involve expansion of high-emitting sources; (3) Divestment goals from target divestment from fossil fuels. A filly aligned entity has comprehensive fossil fuel exclusion or phase-out policies, or has no fossil fuel assets.

IMPLEMENTATION

Internal Accountability Frameworks	The indicator measures to what extent accountability and incentives exist for chief and operations-level staff, as well as whether dedicated climate change responsible person(s) exist in the organization to coordinate climate action.
Shareholder and Client Engagement	The indicator measures whether the organization commits to engaging shareholders or clients on climate action and whether there is evidence of the organization taking the necessary steps by mandating climate reporting requirements or through active ownership on portfolio companies.
Policy Engagement	The indicator describes the commitment to and level of engagement (or lobbying) with government and industry representatives on climate change in a way that encourages, and does not oppose, the transition. This requires regulators and supervisors to approve laws and policies that help align profitability with climate goals and remove barriers to climate-friendly investment.
Climate Risk Strategy	The indicator is based on pillar two of TCFD's framework, about assessment of the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material. The net-zero transition planning will be informed by financial institutions' efforts to identify climate-related risks and opportunities.
Climate Risk Management	The indicator is based on pillar three of TCFD's framework, about disclosure of how the organization identifies, assesses, and manages climate-related risks, in short: the organization's internal climate risk due diligence and related procedures.
Disclosure of Climate Risk	The indicator describes whether an organization has committed to the disclosure of climate risks and whether it started disclosures.

Disclosure of investment data	The indicator assesses whether the organization has set up, or plans to set up, internal procedures that allow for the harmonized disclosure of investment in new green projects or high-emissions activities.
Disclosure of emissions data	The indicator measures whether the organization is committing to disclose its emissions, and whether there is evidence that emissions are already been tracked by the organization.

IMPACT

Project-level Clean Energy Financing	This indicator measures how entities have directly contributed to funding of new clean energy via direct/primary investment. The final project-level data is also used to calculate project-level investment that has been indirectly enabled by financial entities.
Project-level Fossil Fuel Financing	This indicator measures how entities have directly contributed to funding of new fossil fuel projects via direct/primary investment. The final project-level data is also used to calculate project-level investment that has been indirectly enabled by financial entities.

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