# CLIMATE READY

# USING THE TCFD FRAMEWORK

## A LAPFF GUIDE FOR LGPS PREPARERS OF CLIMATE RISK REPORTS

Local Authority Pension Fund Forum

# CONTENTS



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# Introduction

This report serves as a concise guide for Local Government Pension Scheme (LGPS) funds to navigate the UK's climate risk reporting landscape. While LGPS funds are not currently mandated to disclose in line with the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations, there is an increasing expectation that the Ministry of Housing, Communities and Local Government (MHCLG) will introduce such requirements, following its 2022 consultation[1] on LGPS climate risk reporting.

In anticipation of these developments, the Local Authority Pension Fund Forum (LAPFF) has prepared this document to assist its members in preparing for TCFD-aligned reporting. The report outlines the core principles of the TCFD framework, situates it within the global legislative context, and details the specific legal and regulatory environment of the UK. It directs readers to key guidance from regulators, industry associations, and other relevant entities as well as offering insights into emerging issues and practical advice from LGPS peers and consultants experienced in climate risk reporting.

The aim is to provide a 'quick start' resource that orients readers within the complex regulatory landscape, offering clear signposts to quality materials and facilitating knowledge sharing among LAPFF members in the evolving field of climate risk management. If, as expected, the IFRS sustainability standards supersede TCFD as the standard for climate risk reporting in the UK and globally, the contents of this report will remain relevant, as IFRS S2 (the climate standard) essentially transposes TCFD into an IFRS format as discussed in the sections that follow.

1 Department for Levelling Up, Housing & Communities, 2022, "Consultation: Local Government Pension Scheme (England and Wales): Governance and reporting of climate change risks.", https://www.gov.uk/government/consultations/local-government-pension-scheme-england-and-wales-governance-and-reporting-of-climate-change-risks/local-government-pension-scheme-england-and-wales-governance-and-reporting-of-climate-change-risks

Photo by Daniel Mizrahi on Unsplash

# 2. ORIENTATION

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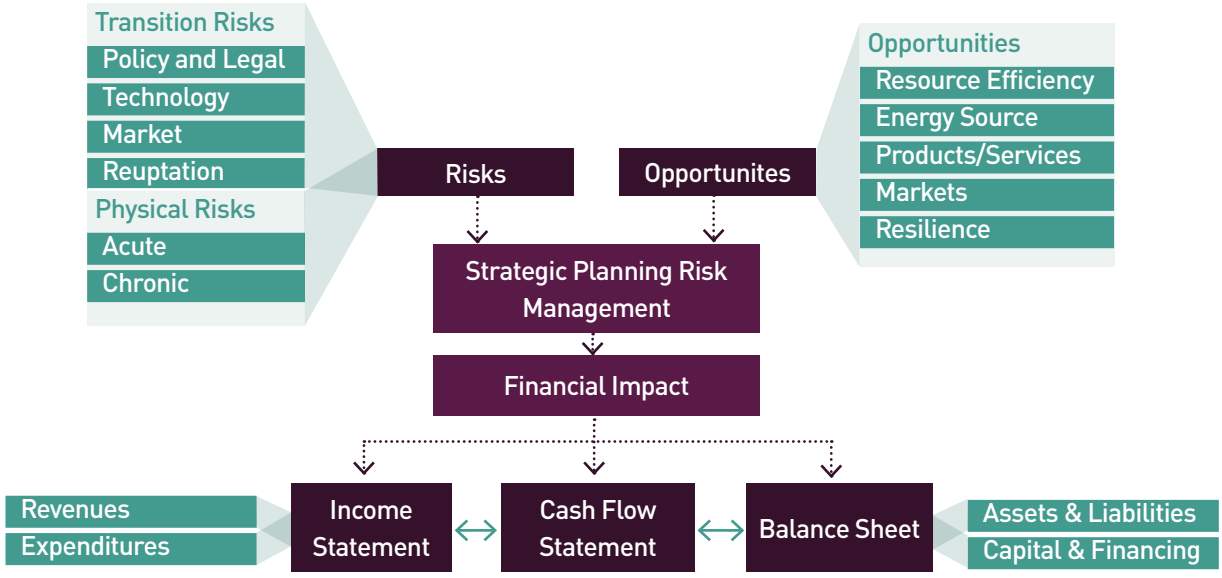
Fig.1: Climate-Related Risks, opportunities, and Financial Impact




Source: TCFD, 2017, Final Report

## 2.1

## Raison d'être of Climate Risk Reportng

When the Financial Stability Board (FSB) established the TCFD, its primary objective was to address the lack of visibility of climate-related risks in the financial industry. This was due to a perceived absence of consistent and comparable reporting by companies. This information gap had the potential to create a pocket of unmanaged and unpriced risks within the financial system which the FSB viewed as 'systemic' and was keen to address. An outline of the key risk transfer mechanisms was presented in the Task Force's final report[2] before providing the disclosure framework that was aimed at tackling them. The two main categories of risk were identified to be transition and physical risks (Fig. 1).

The sources of **transition** risks arise primarily from society's endeavours to mitigate and manage climate impacts. They have a broad nature, emerging from changes in laws and policies of governments, changes in technologies, market and demand dynamics as well as changing social norms in terms of client expectations and liability risk. These factors in general are seen to have a greater potential for business disruption in the short term in a rapid decarbonisation scenario, which would in turn allow the world to avoid the materialisation of the most significant **physical risks**, which is the second risk category. In a scenario where the world takes insufficient action to stop the worst effects of global heating, transition risks are likely to be moderate with physical risks becoming increasingly intense in the medium to long term.

2 TCFD, 2017, "Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures", https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf

The Task Force was also keen to point out that where there is great change, there is great **opportunity** and has highlighted a number of areas which will require investment to ensure a low-carbon transition. Many of these opportunities are the opposite side of the coin from transition risks and in many respects also depend on determined government action coupled with well-designed structural change policies. This can result in business opportunities but with high degrees of political risk, particularly in the 'Fragmented World' scenario where international cooperation deteriorates (see Scenarios chapter).

Fig.2: The four Core Elements and eleven Recommended Disclosures of the TCFD

### Governance

Disclose the organisation's governance around climate-related risks and opportunities.

**Recommended Disclosures**

a) Describe the board's oversight of climate-related risks and opportunities.

b) Describe management's role in assessing and managing climate-related risks and opportunities.

### Risk Management

Disclose how the organisation identifies, assess, and manages climate-related risks.

**Recommended Disclosures**

a) Describe the organisation's processes for identifying and assessing climate-related risks.

b) Describe the organisation's processes for managing climate-related risks.

c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.

### Strategy

Disclose the actual impacts of climate-related risks and opportunities on the organisation's business, strategy, and financial planning where such information is material.

**Recommended Disclosures**

a) Describe the climate-related risks and opportunities the organisation has identified over the short term.

b) Describe the impact of climate-related risks and opportunities on the organisation's business, strategy and financial planning

c)Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

### Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

**Recommended Disclosures**

a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.

b) Disclose Scope 1, Scope 2, and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

Source: TCFD,2022, Overview

## 2.2

## TCFD Framework Components

The FSB aimed to take a comprehensive approach to ensure preparers were both measuring and managing climate issues. The TCFD has been very explicit from the start that these are interrelated, and although reporting often focuses on **metrics** being disclosed, the Task Force has continuously emphasised that a clear **governance** structure coupled with a robust **risk management** framework that is embedded in the company's **strategy** is fundamental in preparing for climate-related changes. In fact, these four areas make up the main structure of the reporting framework (see Fig.2):
A. Governance,
B. Strategy,
C. Risk Management,
D. Metrics and Targets.

Each of these elements has between 2 and 3 *recommended disclosures* (11 in total, see Fig. 2), although where the framework is applied on a *voluntary* basis it is rarely disclosed against in its totality. In the Final Report of the TCFD[3], which lists these *recommended disclosures*, there is also *guidance,* which specifies the information being asked for in a moderately granular format. This guidance is further augmented in a separate document called the *Implementation Annex*[4]*,* which repeats this guidance verbatim, however for some sectors (including Asset Owners) it also offers additional industry-specific guidance. In fact, the current version of the final report has the guidance section crossed out, referring the readers directly to the 2021 version's *Implementation Annex,* which is a suggested starting place for LGPS funds beginning their TCFD efforts (see below Quick Start Box).

As the Task Force was breaking new ground, it was felt that a number of the disclosure areas warranted additional technical guidance. This led to the publication of a series of *technical supplements* and *supporting guidance,* which are useful for project teams responsible for preparing responses to these sections, all of these documents are available free on TCFD's publications page[5]. The most important of these are:

### A. 2017 Scenario Analysis Technical Supplement[6]

This provides guidance on using future scenarios and creating in-house ones, addressing elements like carbon pricing and changing energy mix. It emphasises integrating scenarios into risk management and strategic planning, discusses the trade-off between physical and transition risks (Fig. 3) and provides examples of models being used in the market.

3 TCFD, 2017, "Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures.", https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf

4 TCFD, 2021, "Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures", https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Implementing_Guidance.pdf

5 TCFD Publications website: https://www.fsb-tcfd.org/publications/

6 TCFD, 2017, "Technical Supplement The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities", https://assets.bbhub.io/company/sites/60/2021/03/FINAL-TCFD-Technical-Supplement-062917.pdf

Fig.3: Trade off between transition and physical climate risks


Source: TCFD, 2017, Scenario Analysis Technical Supplement

## B. 2020 Guidance on Risk Management Integration and Disclosure[7]

The guide emphasises incorporating climate risks into *existing* risk management processes in the organisation. It details the unique aspects of climate risks, including their regional variability, longer time horizons, and systemic effects, and provides tools like scenario analysis and hazard maps to track and mitigate risks effectively.

## C. 2021 Guidance on Metrics, Targets, and Transition Plans[8]

Provides detailed insights into measuring, monitoring, and disclosing climate risks and opportunities. It emphasises using cross-industry metrics (see Appendix) for comparability and discusses industry-specific metrics, highlighting financial impacts. Key disclosures, such as Scope 1, 2, and 3 emissions, physical and transition risks, and capital deployment, are identified as most useful by stakeholders.

The document outlines three portfolio alignment tools critical for investors:

1. *Binary Target Measurements* - Assessing the proportion of assets with credible net-zero targets (yes / no).
2. *Benchmark Divergence Models* - Evaluating aggregate portfolio reductions against desired decarbonisation pathways or benchmarks.
3. *Implied Temperature Rise (ITR) Models* - Translating asset-level emissions into a global warming projection, making the assumption that all actors followed similar emission trajectories.

The guidance also provides a framework for credible transition plans, emphasising their integration with the TCFD's recommendations on governance, strategy, risk management, and metrics/targets.

7 TCFD, 2020, "Guidance on Risk Management Integration and Disclosure", https://assets.bbhub.io/company/sites/60/2020/09/2020-TCFD_Guidance-Risk-Management-Integration-and-Disclosure.pdf

8 TCFD, 2021, "Guidance on Metrics, Targets, and Transition Plans" https://assets.bbhub.io/company/sites/60/2021/07/2021-Metrics_Targets_Guidance-1.pdf

## 2.3

## Quick Start Tips

The quantity of materials, varying levels of granularity and multiple changes and updates made in the last decade to the TCFD can be quite confusing. If one adds materials published by other stakeholders (see next section) it can at first feel quite overwhelming. The TCFD has acknowledged this and made efforts to simplify and structure its materials. For example, there is a handy 3-page *Document Index*[9] which lists and categorises the TCFD publications, as well as the short 50-page *Overview booklet*[10] (with many graphics), which provides a summary of the TCFD origins and main structures.

For LGPS funds just beginning to assess climate risks and using the TCFD framework, the most direct way of acquiring a clear understanding of what is expected for asset owners is suggested below. This follows a general approach of understanding the key TCFD disclosure areas, reviewing disclosures of peers and reading a review of The Pensions Regulator of occupational pension funds covered by the DWP disclosure regulations.

### QUICK-START:

1. Go to https://www.fsb-tcfd.org/publications/ and download the Implementation Annex
2. Go straight to page 37 for guidance aimed at Asset Owners
    - The content in this section is structured around the four *core elements* (Governance, Strategy, etc.) with the *2-3 recommended disclosures* on the left and *Guidance* on the right.
    - See *'Supplemental Asset Owner guidance'* below the *'Guidance for All Sectors'*
3. Consider ticking off elements your organisation already has in place (thus conducting a quick *gap analysis*).
4. Highlight areas where deep-dives might be warranted and schedule a review of relevant TCFD (above) or third-party guidance (see section below) at a later date.
5. Scan TCFD disclosures of an LGPS peer of similar size and structure.
6. Skim through The Pensions Regulator's (TPR) most recent review of occupational pension fund TCFD disclosures (link here).

## 2.4

## Helpful Resources

The below list constitutes a helpful starting point in terms of exploring guidance outside the TCFD itself. The list covers four main areas: climate risk management (general and more technical), net zero alignment and scenario work. This is not an exhaustive list, and there is a very large number of actors that produce guidance on TCFD, including regional regulators, industry groups, NGOs and consultants[11]. The list is however tailored to the UK context and specifically to pension fund preparers, taking into account the UK regulatory environment around pension fund climate risk disclosures.

9 TCFD, 2023, "TCFD Document Index", https://assets.bbhub.io/company/sites/60/2023/03/TCFD_Report_Index.pdf

10 TCFD, 2022, "Overview", https://assets.bbhub.io/company/sites/60/2022/12/tcfd-2022-overview-booklet.pdf

11 For example Hymans Robertson which contributed to this report (see next chapter), has a public TCFD Guide on their website, as do many other consultants working in this area.

## A. General guidance on TCFD and climate risk disclosure:

- **DWP (2022)** "Governance and reporting of climate change risk: guidance for trustees of occupational schemes" - hyperlink
- **PRI** (2018) "An asset owner's guide to the TCFD recommendations" - hyperlink
- **TPR** (2022) "Governance and reporting of climate change risk: guidance for trustees of occupational schemes" - hyperlink
- **TPR** (2024) "Review of climate-related disclosures by occupational pension schemes 2024" - hyperlink

## B. Technical guidance on TCFD and climate risk disclosure

- **DWP,** Pensions Climate Risk Industry Group (PCRIG) (2022) "Aligning your pension scheme with the Taskforce on Climate-Related Financial Disclosures recommendations" - hyperlink
- **FCA** (2024) "Environmental, Social and Governance sourcebook" - hyperlink
- **FCA and PRA, Climate Financial Risk Forum** (CFRF) "CFRF Guides" (multiple topics) - hyperlink
    - Including a list of data providers: CFRF (2022) "Illustrative list of climate risk data providers and tools/data/products for financial institutions" (XLS) - hyperlink

## C. Net Zero Alignment and Net Zero Transition

- **Climate Action 100+**, (2024) "Net Zero Company Benchmark Framework" (PDF) - hyperlink.
- **Climate Action 100+**, "Net Zero Company Benchmark Company Assessments" - hyperlink
- **Glasgow Financial Alliance for Net Zero (GFANZ)** (2022) "Financial Institution Net-zero Transition Plans. Fundamentals, Recommendations, and Guidance." - hyperlink
- **HM Treasury, Transition Plan Taskforce (TPT)** (now subsumed by the IFRS Foundation) (2024) "Asset Owners Sector Guidance" - hyperlink
- **Institutional Investors Group on Climate Change (IIGCC)** (2024) "Net Zero Investment Framework updated: NZIF 2.0" - hyperlink
- **Science Based Targets Initiative (SBTi)**, Companies taking action - hyperlink
- **TCFD Portfolio Alignment Team (PAT)** (2021) "Measuring Portfolio Alignment: Technical Report" - hyperlink
- **Transition Pathway Initiative (TPI)**, Company Management Quality Search - hyperlink

## D. Scenarios

- **Climate impact explorer**, online model of climate impacts by region - hyperlink
- **FCA and PRA, Climate Financial Risk Forum (CFRF)** (2022) "Scenario Analysis in Financial Firms" - hyperlink
- **FCA and PRA, Climate Financial Risk Forum (CFRF)** (2023) "Scenario Analysis Guide for Asset Managers" - hyperlink
- **Institutional Investors Group on Climate Change (IIGCC)** (2019) "Navigating scenario analysis - a guide for institutional investors" - hyperlink
- **International Energy Agency (IEA)** (2024) "Global Energy and Climate Model. Documentation - 2024" - hyperlink
- **Network for Greening the Financial System (NGFS)** (2024) "Scenarios portal" - hyperlink
- **Rocky Mountain Institute (RMI)**, Paris Agreement Capital Transition Assessment (PACTA) - hyperlink
- **World Bank**, Carbon Pricing Dashboard - hyperlink
- **World Resource Institute (WRI)**, Aqueduct water risk model - hyperlink

# 3. MARKET AND REGULATORY CONTEXT

Photo by Mike Newbry on Unsplash

## 3.1

## Evolving International Financial Market

The FSB announced the formation of TCFD at the Paris Climate Summit (COP21) in 2015 with Mark Carney and Michael Bloomberg as co-chairs. Part of the efforts to buttress the stability of the financial system after the Global Financial Crisis (GFC) was designating climate change as a 'systemic' risk to the stability of the financial sector. This designation allowed for regulators to take a comprehensive approach to measuring and managing this risk as part of the post-GFC macro prudential reforms.

The TCFD is concerned only with aspects of a company's climate information which could have pecuniary consequences, i.e. is only interested in 'financial materiality' as opposed to 'double materiality' which would also include climate risks affecting stakeholders outside of the company itself. This design aspect corresponds directly with mainstream investor's fiduciary duties[12] and implies that if climate is likely to have a financial impact, investors should strive to measure and manage this risk.

The TCFD was initially published as a voluntary disclosure framework, however given its origin as a task force of the G20 Finance Stability Board (FSB) which in turn reports to the G20 Finance Ministers and Central Bank Governors, the implication had always been that given the systemic nature of climate change risks the recommendations of the Task Force would form the basis for disclosure regulations. In 2019 the Network for Greening the Financial System (NGFS) a group of 138 central banks and financial regulators (including the UK) endorsed the TCFD framework and recommended companies within their jurisdictions use it as a basis for climate risk disclosure.

By the end of 2020, most of the dominant sustainability disclosure standards - CDP, the Climate Disclosure Standards Board (CDSB), Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC) and the Sustainability Accounting Standards Board (SASB) - published a prototype disclosure standard that built on the TCFD recommendations. This ultimately became the basis for the IFRS Sustainability Standards when the IFRS Foundation completed its acquisition of SASB in 2022. In the summer of 2021, both the G7 and the G20 publicly pledged to embed disclosure requirements based on the TCFD framework[13] in line with domestic regulatory frameworks.

The TCFD was publishing regular annual status reports on its uptake across the world. In October 2023 it noted that over 4,800 organisations (mainly companies) had formally supported its recommended disclosures with 19 jurisdictions, accounting for close to 60% of global GDP, mandating or proposing to mandate TCFD-aligned disclosure requirements[14].

In addition to highlighting progress and market uptake, the TCFD Status Reports also highlighted gaps in data and disclosure practices. As an effort to rectify the data gap issue, Michael Bloomberg as UN Special Envoy of Climate Ambition and Solutions and

12 Principals for Responsible Investment, 2019, "Fiduciary duty in the 21st century", https://www.unpri.org/fiduciary-duty/fiduciary-duty-in-the-21st-century-final-report/4998.article

13 FSB-TCFD website, About: History, https://www.fsb-tcfd.org/about/

14 TCFD, (2023), "2023 Status Report", https://assets.bbhub.io/company/sites/60/2023/09/2023-Status-Report.pdf

Chair of the TCFD along with French President Emmanuel Macron launched the Climate Data Steering Committee[15] which recommended the creation of the Net-Zero Data Public Utility (NZDPU). The NZDPU is expected to integrate with the United Nations Framework Convention on Climate Change's (UNFCCC) Global Climate Action Portal with the aim of standardising and centralising data while offering free public access to company-level climate data.

IFRS' acquisition of the Sustainability Accounting Standards Board ultimately created the International Sustainability Standards Board (ISSB) within the IFRS Foundation structure. First announced at the UN Climate Summit in Glasgow in 2021, by June 2023 the ISSB had published its first two sustainability standards: IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures. The International Organisation of Securities Commissions (IOSCO) endorsed ISSB Standards in July 2023.

IFRS S2 (climate) had fully incorporated the TCFD recommendations and has the same structure of four core elements: Governance, Strategy, Risk Management, and Metrics and Targets. In a few areas it is more detailed and prescriptive than the TCFD and is aimed at being adopted by financial regulators as a mandatory, as opposed to a voluntary, disclosure framework. Nevertheless, IFRS S2 is seen as the next incarnation of the TCFD, albeit with the increased rigour and universal applicability of the IFRS - a comparison between the two is provided in the table below.

Table 1. Overall comparison of IFRS S2 and TCFD recommendations

| TCFD's four core recommendations | IFRS S2 summary comparison |
|---|---|
| **1 - Governance** | • Broadly consistent. |
| **2 - Strategy** | • Requires a company to consider and refer to its **Industry-based Guidance.**<br>• Requires disclosure of **additional information** regarding resilience.<br>• Does not specify which **climate-related scenarios** to use.<br>• Provides additional **application guidance and reliefs.** |
| **3 - Risk management** | • Requires additional disclosures on the processes a company uses to identify, assess, prioritise and monitor **opportunities**. |
| **4 - Metrics and targets** | • Requires disclosure of industry-based metrics.<br>• Requires disclosure of information about **Scope 1 and Scope 2 GHG emissions** only if it is material.<br>• Requires **additional disclosures** related to a company's GHG emissions and planned use of carbon credits.<br>• Provides additional **application guidance and reliefs**. |

Source: IFRS Foundation, 2024, "Progress on Corporate Climate-related Disclosures—2024 Report"

15 https://www.climatedatasc.org/#the-members

In October 2023, the TCFD disbanded and the FSB asked the IFRS Foundation to take over monitoring of company progress in climate-related disclosures.

At present the TCFD remains the mandatory reporting framework for climate risk in the countries that have adopted it as such, including the UK. The UK Government is currently assessing the suitability of IFRS S2 for endorsement as a reporting standard. As of May 2024, the Department for Business and Trade had disclosed that the Government aims to make the UK-endorsed ISSB standards available in Q1 2025, which will be known as UK Sustainability Reporting Standards (UK SRS). This standard will be based on the IFRS standard and divert from it only where necessary for UK-specific matters. The work is being conducted by the UK Sustainability Disclosures Policy and Implementation Committee (PIC) of the Department for Business and Trade along with a Technical Advisory Committee (TAC) consisting of industry experts. Final decisions are expected in Q2-2025 and the first mandatory reporting is anticipated for 2026.

The most recent IFRS status report[16] from November 2024 the uptake of its sustainability standards shows that 16 jurisdictions have already finalised decisions on the adoption of the IFRS standards, including the EU, and 14 are in the process of doing so. Many of the jurisdictions yet to finalise their disclosure regulations are transposing the TCFD requirements which are already in place into the IFRS standards (e.g. the UK).

## 3.2

## UK Climate Risk Regulation

The UK government has consistently supported efforts to make the UK a leading centre of sustainable finance. In 2021 announced it would become the world's first Net Zero-aligned Financial Centre[17] with regulation relating to climate risk disclosure forming a central pillar of the strategy. Since 2019 the Green Finance Strategy[18] laid out the government's aspirations, including that of making TCFD disclosure mandatory for large companies and financial institutions. In the same year, the PRA became the first prudential regulator to publish a set of supervisory expectations on how banks and insurers should manage climate risks[19].

The following year, in November 2020, a cross-Whitehall and regulator Taskforce published a roadmap[20] of when TCFD disclosure coverage would be achieved with responsibilities and timelines allocated to various regulators and departments including DWP, TPR, FCA, PRA and BEIS. Explicit mention of LGPS or the departments that regulate them was absent. However, the overall ambition of progressively broadening mandatory disclosure by 2025 across the corporate and financial sectors was made clear.

16 IFRS, 2024, "Progress on Corporate Climate-related Disclosures - 2024 Report", https://www.ifrs.org/news-and-events/news/2024/11/new-report-global-progress-corporate-climate-related-disclosures/

17 HM Treasury, 2021, "Fact Sheet: Net Zero-aligned Financial Centre", https://www.gov.uk/government/publications/fact-sheet-net-zero-aligned-financial-centre/fact-sheet-net-zero-aligned-financial-centre

18 HM Government, 2019, "Green Finance Strategy, Transforming Finance for a Greener Future", https://www.gov.uk/government/publications/green-finance-strategy

19 PRA, 2019, "Supervisory Statement SS3/19, Enhancing banks' and insurers' approaches to managing the financial risks form climate change", https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/supervisory-statement/2019/ss319

20 HM Treasury, 2020, "A Roadmap towards mandatory climate-related disclosures", https://assets.publishing.service.gov.uk/media/5fa94f24d3bf7f03aa255627/FINAL_TCFD_ROADMAP.pdf

## Table 1. Overall comparison of IFRS S2 and TCFD recommendations

| Preparer Group | Reporting required from* | Regulator | Note |
|---|---|---|---|
| Banks, building societies and insurers | 1 Apr 2019 | PRA | |
| Premium listed companies | 1 Jan 2021 | FCA | |
| Occupational pensions >£5bn | 1 Oct 2021 | DWP | |
| Asset Managers, Life Insurers, and FCA-Regulated Pension Providers >£50bn AUM | 1 Jan 2022 | FCA | Both entity and product level disclosures. |
| Standard listed companies | 1 Jan 2022 | FCA | |
| Unlisted companies | 6 Apr 2022 | BEIS | Companies with over 500 employees and >£500m turnover. |
| Occupational pensions >£1bn | 1 Oct 2022 | DWP | |
| Asset Managers, Life Insurers, and FCA-Regulated Pension Providers >£5bn AUM | 1 Jan 2023 | FCA | Both entity and product level disclosures. |

* reporting required for year-end reporting dates after this date.

In 2021 the Department for Work & Pensions[21] issued statutory guidance on governance and reporting climate change risk that affected occupational pension schemes. In the same year, the Financial Conduct Authority issued a policy statement[22] which had a similar effect on listed companies, investment management firms, life insurers and FCA-regulated pension providers. In 2022 BEIS[23] had made a requirement on non-listed large firms (with over 500 employees and over £500m in turnover) to conduct TCFD disclosures.

In 2023 following the publication of the IFRS Sustainability Disclosure Standards, the UK Government reaffirmed in its updated sustainable finance strategy[24], its commitment to transposing these standards into the UK regulatory environment. The government has outlined a strategy to launch a formal assessment mechanism in June 2023 with the aim of making an endorsement decision within 12 months.

The Sustainability Disclosure Requirements (SDR) Implementation Update[25] published in May 2024 outlines plans to transition from the TCFD to the IFRS Sustainability Disclosure Standards through the transposition of IFRS S1 (General sustainability) and S2 (Climate) into a UK Sustainable Disclosure Standard (SDS) with a consultation and endorsement decision planned for Q1-2025. However, the government has stated it does not expect these standards to be effective until periods beginning on or after 1 January 2026 at the earliest.

21 Subsequently updated in Oct 2022. DWP, 2022, "Governance and reporting of climate change risk: guidance for trustees of occupational schemes", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1085852/governance-reporting-climate-change-risk-occ-schemes.pdf#page=4

22 FCA, Dec 2021, "Enhancing climate-related disclosures by as a managers, life ensures an FCA regulated pension providers", https://www.fca.org.uk/publication/policy/ps21-24.pdf

23 Department for Business, Energy & Industrial Strategy, 2022, "Mandatory climate-related financial disclosures by publicly quoted companies, large private companies and LLPs", https://assets.publishing.service.gov.uk/media/62138625d3bf7f4f05879a21/mandatory-climate-related-financial-disclosures-publicly-quoted-private-cos-llps.pdf

24 HM Government, 2023, "Mobilising Green Investment: 2023 Green Finance Strategy", https://www.gov.uk/government/publications/green-finance-strategy

25 HM Government, 2024, "Sustainability Disclosure Requirement: Implementation Update 2024", https://www.gov.uk/government/publications/sustainability-disclosure-requirements-implementation-update-2024

The then Department of Levelling Up, Housing and Communities (DLUHC), which oversees the LGPS, has concluded a consultation in 2022[26] on requiring LGPS administrating authorities to assess and disclose their climate risks using the TCFD framework, including conducting scenario analysis and assessing the Paris Alignment of their assets. Since the consultation, however, there has been a delay in implementing the regulations themselves, and at the time of writing it is unclear when these regulations will be implemented.

Regulators which oversee entities required to prepare TCFD reports provide regular reviews of market practice and often lay out recommendations for improvements. The Financial Reporting Council conducts annual reviews[27] of corporate reporting, which includes a review of climate risk reports, working closely with the FCA in line with its existing joint supervisory strategy in monitoring TCFD-aligned disclosures. The PRA provides banks with feedback on climate risk accounting through its annual letter to bank CFOs[28]. TPR reviews pensions' responses to the DWP regulations every year and offers both a statistical review of responses as well as recommendations for improvement, the application of which it then reviews in subsequent reporting periods.

The most recent TPR review of climate-related disclosures by occupational pension schemes published in April 2024[29] has valuable insights for LGPS administering authorities and pension committees, despite structural differences in private pensions and LGPS funds. The review covers both general topics such as length of report and more detailed comments highlighting good practice in structuring the disclosure (e.g. including simplified sections directed at members or supporting reusing parts of the previous year's reports). It also lists good practice across the four main TCFD recommendations and highlights actions that Trustees have taken to improve future reporting, which is a very good source of climate reporting insight amongst pension peers.

26 DLUHC, 2022, "Local Government Pension Scheme (England and Wales): Governance and reporting of climate change risks", https://www.gov.uk/government/consultations/local-government-pension-scheme-england-and-wales-governance-and-reporting-of-climate-change-risks/local-government-pension-scheme-england-and-wales-governance-and-reporting-of-climate-change-risks

27 FRC, 2024, "Annual Review of Corporate Reporting 2023/24", https://www.frc.org.uk/news-and-events/news/2024/09/frc-publishes-annual-review-of-corporate-reporting-1/

28 Bank of England Prudential Regulatory Authority, 2024, "Thematic feedback on accounting for IFRS 9 ECL and climate risk", https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2024/thematic-feedback-on-accounting-for-ifrs-9-ecl-and-climate-risk.pdf

29 TPR, 2024, "Review of climate-related disclosures by occupational pension schemes 2024", https://www.thepensionsregulator.gov.uk/en/document-library/research-and-analysis/review-of-climate-related-disclosures-year-2

# 4. PRACTICAL ADVICE FROM LGPS PEERS

Photo by Tamanna Rumee on Unsplash

*The below section lists practical experiences and suggestions from LGPS funds that have already gone through the process of reviewing their climate risk exposure and have prepared disclosures using the TCFD framework. Three LAPFF members and a consultant working with LGPS funds on TCFD reporting were kind enough to share the approaches that worked in their circumstances. It is interesting to see that a number of tasks are similar across different scheme sizes, while others are unique to a scheme's structure and size. The section closes with a generalised work path incorporating some of the insights from the interviews.*

## 4.1

## East Sussex Pension Fund

### A. Key data:

- £4.92bn AUM
- Independent, with 59% of AUM managed through ACCESS Pool
- 84,000 members
- Has used the TCFD framework since 2018

### B. Initiating the TCFD process

**The fund started developing its Responsible Investment Strategy in 2018 with assistance from external consultants** helping assess where to start. It established an ESG Working Group to take ownership of the improvement process. The Working Group reviewed disclosures of similar organisations, including inviting a leading LGPS fund to come present on their approach. The fund joined the IIGCC (Institutional Investors Group on Climate Change) and PRI (Principles for Responsible Investment) in order to facilitate collaboration with peers.

**Defining investment beliefs was a critical first step,** and was not easy due to different views of key stakeholders. Ultimately the PRI principles formed the basis of investment beliefs which enabled building out a strategy to manage ESG risks and opportunities. It was found that the largest exposure to ESG and climate risks lay in passive mandates, which prompted a change in investment strategy towards smart beta and impact funds.

### C. How are responsibilities spread across the team

**The fund deliberately spread ESG and climate responsibility across responsible officers** to facilitate full integration of Responsible Investment Strategy with Investment Strategy. It is often one of the most fun parts of people's roles, so everyone is keen to participate and would be disappointed if these tasks were taken away.

**ESPF are careful not to outsource critical analysis,** so it does not become a tick-box exercise that is subsequently not acted upon. Some areas, however, do require expert knowledge and access to certain datasets which may require bringing in external support. Another reason for outsourcing may be to get an independent view on a contentious issue.

**Most of the implementation of the climate strategy is conducted by the investment managers.** ESPF has defined their climate risk principles and updated its voting policy accordingly, with investment managers largely responsible for day-to-day delivery against these policies. In some individual cases, ESPF may notify their asset managers of their views, e.g. ahead of a controversial AGM vote with a specific company.

## D. How to get the most out of TCFD

**If you are not doing the basics, you don't know the levels of climate risk exposure you have**. Getting the foundational structures in place and investigating pockets of risk through deep dives on key issues can provide the most value. The numbers themselves might not be informative on their own, however, **understanding 'what good looks like'** can also help engage with lagging companies in your portfolio and compare fund managers' expertise.

**Managing climate change risks and opportunities is an iterative process.** Aim to get a solid grasp of the basics and focus on incremental, continuous improvements from there. Establishing data flow procedures can be time consuming, however once in place, subsequent annual reporting is fairly straightforward and **can be done in about a week.**

**Start with defining your investment beliefs**, this may not be easy, however, it brings the key stakeholders onto the same page and enables processes and approaches to be built out from there.

**Explicitly assign resources**, particularly in the beginning when the key structures and decisions need to be made. This enables an empowered task team to get on with establishing the key processes and making decisions along the way.

**Use the TCFD exercise to review existing governance and risk management structures**. Seeing their existing processes through a new lens created a helpful challenge that led to improvements they integrated throughout the organisation.

Without a counterfactual, the impact on performance-adjusted returns is impossible to assess. Viewing climate change as a systemic risk ESPF decided to reduce its fossil fuel exposure which was mainly in passive equity mandates and moved to a 60 / 40 active : passive split for its equity holdings, with the passive sleeve moved to systematic, smart beta ESG aware strategies. Although ESPF does not have a policy of fossil fuel divestment the resulting underweight exposure to fossil fuels has meant that it had missed out on the rally in fossil fuel stocks after the Russian invasion of Ukraine. However, **from a risk management perspective, the fund is more clear-eyed on its risk exposure**, has improved engagement with its investment managers and reduced long-term risk.

## E. Learnings from TCFD core disclosures

### E1. Governance

Conducting a governance review from a climate perspective has led to **updating the training schedule**, which makes sure all responsible officers have the requisite knowledge on climate dynamics and risk transfer mechanisms. **They assigned explicit responsibilities through the risk matrix**, which clarified and improved decision-making.

### E2. Strategy

**How the fund manager integrates ESG is key.** If the investment manager can't describe how ESG integration works on a day-to-day basis, it is likely not being embedded into the investment strategy.

ESPF is committed to developing climate scenario stress tests, however, has not done so yet. **The quality of the data and the costs of applying scenarios have both undermined the business case** for doing so.

### E3. Risk Management

Having concluded that climate change is a substantial financial factor, **climate risks have been added to the risk register** and incorporated into risk management procedures. This in turn has allowed an analysis of risk drivers and their transfer mechanisms onto the valuation of the fund[30]. A comparison of the probability and likely value at risk from climate change in relation to other risks has determined internal resources allocated to the issue.

### E4. Metrics and Targets

The GHG number is not the most informative of all the datapoints. **Trends, data quality and Paris Alignment have been found to be much more decision useful** and helpful in identifying pockets of risk which led to improved engagement with both companies and investment managers.

## 4.2

## Greater Manchester Pension Fund

### A. Key scheme data:

- £28.6bn AUM (largest LGPS fund in the UK), of which:
- £1.5bn managed through the Northern LGPS Pool
- 417,961 members
- Has been using the TCFD framework for 8 years

### B. Initiating the TCFD process

**GMPF has had a responsible investment policy in place, including on climate change, for 17 years.** When the TCFD framework was published, the fund began using it for disclosure in anticipation of it becoming a regulatory requirement. The fund works with PIRC directly on its RI policy, and collaborates with peers through forums, specifically: LAPFF, IIGCC and Climate Action 100+.

### C. How are responsibilities spread across the team

The Pension Fund Management Panel **oversees climate matters through the Investment Monitoring and Environmental, Social and Governance (IMESG) Working Group**, which monitors investments, reviews responsible investment strategy, and includes one investment manager primarily focused on ESG and climate

30 East Sussex County Council, East Sussex Pension Fund, 2023, "Annual Report and Accounts 2022-23", https://www.eastsussexpensionfund.org

accountability, although the implementation of the climate strategy takes place through regular investment management structures, which includes leaning on external investment managers to apply the climate risk approach. Quarterly meetings of the IMESG Working Group are attended by investment managers who update GMPF on an ongoing basis.

**The knowledge structure follows a 'strong in-house generalist with deep-dive external expert' model**. This blends keeping abreast of emerging best practice, with agility and a lean team structure. Spreading responsibilities across the team improves integration with the investment process.

**Collaboration through industry groups and testing the applicability of external resources,** e.g. IIGCC's Net Zero Investment Framework 2.0 or PACTA (Paris Agreement Capital Transition Assessment), helps maintain awareness of industry best practice and the applicability of new tools to GMPF's portfolio.

## D. How to get the most out of TCFD

**It can be easy to get bogged down in metrics and targets, so focus on getting this area right.** Some of the basic metrics can be labour intensive and not yield much insight, and these might be useful to outsource completely, e.g. GHG footprinting. However, it is important to ensure you trust the external provider's methodology, as different estimation approaches can result in the final footprint figure varying significantly between providers.

**Some parts of TCFD do not change significantly once created.** For example, once a solid governance framework is established it may need minor updates year-on-year, but in general will not require much work on an ongoing basis.

**While still developing internal expertise it may be useful to obtain an independent assessment of the portfolio's climate risk.** You can then use the outcome to challenge your investment managers on key names and understand whether the climate issues are being properly integrated or mitigated. For some funds, the pools may offer to do some of the footprinting and analysis, or potentially even the whole TCFD report.

**Transparency with stakeholders is a key value add.** When the approach and its results are public, funds can showcase and evidence the work that is being done. This allows an improved dialogue with members, regulators and the public in general.

**The exercise has not drastically affected GMPF's strategic asset allocation decisions,** and the fund has not divested from fossil fuels on the back of the TCFD process. It has however enabled better and more constructive engagements with investment managers, including more pertinent questions being asked on the risk of stranded assets, even if the managers would typically say that the value of the investment is premised on the next seven years of revenue, which they feel is safe under any scenario.

The changes that have been affected include moving from a passive manager to a multi-factor investment approach where **adding a carbon filter allowed for a reduction of carbon intensity by 40% without impacting performance.** This had

not resulted in moving fully away from fossil fuels, it did however improve clarity on risks and their control. Having conducted a three-year review of what would have been the impact on returns if GMPF had divested from fossil fuels, the fund found that staying invested resulted in £620 million of better returns for members.

Now that climate issues are integrated and with reporting structures in place, **preparing the annual TCFD report takes about 2 weeks of one person's time.** However, climate awareness and risk management is ongoing as it is embedded in the day-to-day investment process, which is where the real work and value-add is.

**For the LGPS a key challenge is communication with non-expert stakeholders.** Climate change is a complex area and there is a real risk of making oversimplifying statements regarding the approach that is being taken and its implications on the investment strategy.

## E. Learnings from TCFD core disclosures

### E1. Governance

**A clear governance structure is essential** to ensure accurate and effective reporting. The governance and strategy sections done well can underpin robust risk management and inform the development of relevant metrics and targets.

**The establishment of a dedicated IMESG Working Group as well as adding climate change to the fund's risk register were foundational** to implementing a structured response. The investment officers of the fund have a strong conviction that climate issues are material based on the best currently available science. However, **without any counterfactual, it is difficult to assess how effective the fund's current response is.**

### E2. Strategy

**GMPF conducts climate scenarios analysis, however, it does not publish the results.** It does share them with stakeholders in private only because this allows them to explain the results with all of their nuances. There is a concern that with so many assumptions and complexities hidden within the models, the outcomes and decisions that flow from them can be easily misunderstood. The exercise is conducted using the PACTA tool which includes an assessment of alignment of GMPF's assets with Paris agreement goals. The tool also includes an assessment of physical risk and transition risk across multiple categories of risk drivers. In addition, GMPF's actuary Hymans Robertson undertakes climate analysis using three scenarios, all of the analysis is subsequently integrated into GMPF's investment mandates and infrastructural allocations.

**Forward-looking analysis and scenarios work is an area of ongoing improvement.** Estimates regarding value at risk are in many cases based on sectorial models that in GMPF's view are too simplistic to be relied upon unconditionally. Scenarios themselves seem to result in a conservative damage estimate in high carbon emissions futures, a few percentage points of loss GDP growth in scenarios involving global climate collapse. This is leading to some advisors moving from quantitative scenarios to more qualitative descriptions of possible future trajectories. Nevertheless, the scenario analysis is a good way of stress testing key investment strategy assumptions.

**GMPF has established a Net Zero transition plan** involving halving of WACI[31] from 2019 to 2030 and achieving Net Zero financed missions by 2050. Every year the strategic asset allocation (SAA) is reviewed and involves asking investment managers, their own investment officers and advisors whether or not climate change risks should impact asset allocation decisions for the upcoming period. So far, no changes to SAA have been made based on climate issues.

### E3. Risk Management

**The whole Pension Fund Management Panel receives explicit training on climate change** concepts and potential risk transfer mechanisms.

**When comparing climate issues to other risks based on their materiality, it is impossible to be completely objective**. The belief is that they are material based on existing science. The uncertainties underlying the assessments at the moment are too wide to be certain whether the fund is doing too much or too little to address climate risks. However, including it as a material risk within the investment beliefs gives a more structured and systemic approach. Investment managers have a key role to play here, with their climate integration processes being the first line of defence in assessing and prioritising climate issues with normal investment considerations.

### E4. Metrics and Targets

**Deciding which metrics to use was based on data availability, guidance from IIGCC** (The Institutional Investor Group on Climate Change) **and metrics used by the main investment managers.** The fund has not conducted a review of asset alignment with the Paris agreement because they feel the methodology is not robust enough at this point. GMPF does have a climate solutions target for the infrastructure portfolio where it sees it can have the most direct impact. At the moment it is exceeding that target significantly, primarily because general infrastructure asset managers are investing heavily in renewable energy with over £1 billion already invested in climate solutions.

**The most useful metrics are those showing forward looking alignment of the highest emitting companies.** This allows for prioritising engagement with investment managers on those names and risk assessment through scenario analysis.

## 4.3

## Border to Coast Pensions Partnership

### Key Stats

- Border to Coast is an investment pool of 11 LGPS funds
- £52.3bn AUM at 31 March 2024
- Established in 2018, started using TCFD from the outset
- 1.1m LGPS members, 3,100 employers

31 WACI = Weighted Average Carbon Intensity, a common metric of the average Greenhouse Gas footprint of a fund.

## B. Initiating the TCFD process

**Climate change as a systemic risk** was acknowledged by the executive team at the launch of the pool in 2018 and was supported by Partner Funds. This formed the basis of investment beliefs that integrating Responsible Investment issues would lead to improved "sustainable risk-adjusted returns", in addition to "positively impacting the world beneficiaries live in." In line with both of those objectives, in 2021 the firm made a commitment to a **Net Zero GHG emissions target by 2050 or sooner** and to have all of its assets **aligned with net zero by 2040**.

**Conducting a gap analysis early on** across the TCFD's four pillars allowed for a better understanding of what needed to be prioritised. It highlighted actions that were not being done at the time, including scenario analysis and target setting. The first report published in 2019 showed positive direction of travel and acknowledged where improvements were needed. Management quickly realised the RI team could not accomplish the objectives alone, so teammates from the executive, the investment, the risk and legal teams were all engaged.

**Be prepared that the first report is a substantial piece of work**. Challenging, but worth it. Perfection is the enemy of done. Early buy-in from the executive team can be a crucial enabler of the whole process.

Realise that **some asset classes do not yet have the quality of data required** to conduct a thorough climate risk assessment, start with what you have good data for and build out from there.

**Be clear on your principles for using data**, it's reasonable to set a higher bar for data that is used to underpin target setting than for disclosure. Initially, Border to Coast set targets for Scope 1 and 2 emissions for listed equities and a proportion of corporate fixed income assets only. Data quality and availability is not currently robust enough for private markets and real estate in their Net Zero Roadmap.

**Work closely with the investment team** and investment managers from the start, e.g. on decisions relating to the choice of metrics and engagement strategy. Consider a nuanced approach for high-emitting sectors, e.g. a high-emitting company may also have adopted a comprehensive transition plan against which it is deploying significant CapEx. Adopting a holistic view including the strength of management and the investment rationale is very important.

## C. How are responsibilities spread across the team

**The responsibility structure was supported by the TCFD disclosure recommendations**. It was very clear what governance structure would best suit Border to Coast given their ambitions and what they wanted to achieve. Having a **clear vision and strategy made it easy to lay out responsibilities** across the team. After the first report, they reassessed the gaps and made adjustments.

**It was useful to bring in an external view to review and validate the approach taken**, especially when looking to develop an internal framework and set targets across some asset classes, where input on data quality and best practice in the market is crucial. Outside assistance in building out a roadmap of progress was useful, once

the plan was in place one can work on their own. Having a plan in place is extremely helpful when discussing steps being taken with stakeholders and tracking progress.

## D. How to get the most out of TCFD

**Fundamentally, the aim is to help investors integrate a 'systemic risk'** into their investment processes. Developing the analytical frameworks and assessment of underlying holdings has to serve that purpose.

**Know what your members want you to prioritise.** Some will be focused on the Just Transition, while others will be concerned about divestment. Develop a strategy to be able to deliver across the key priorities set out in your vision, and be very clear why you are doing what you're doing.

**Be clear about what is feasible.** Data accuracy remains an issue in the market, and where most of what you are working with is based on estimates, it is justified not to set targets and be held to account for changes in metrics which could simply be due to improvements in data quality.

## E. Learnings from TCFD core disclosures

### E1. Governance

**The Chief Investment Officer is responsible for the implementation of the Climate Change Policy** which is determined by the Board. Oversight is provided by the Investment Committee and a Climate Change Working Group which is chaired by the Deputy CIO and includes senior leaders of the Investment Team. The Investment Team includes a dedicated Responsible Investment Team of six, resources which were identified to be required during the gap analysis.

**A comprehensive training plan is essential** for key decisionmakers to understand how to interpret climate information. There is a plan in place to maintain and increase knowledge regarding climate change risks, risk measurement tools and developments in policy and regulation. This is done through practical on-the-job and formal ESG training for investment teams from in-house experts and external providers. Sustainability topics are covered in lunch-and-learn sessions and "town-hall" meetings.

**Integration of the climate perspective has informed the investment outlook.** Border to Coast have £8bn invested in climate solutions across equity and corporate fixed income funds, with another £2.5bn committed to climate solutions in private markets.[32]

### E2. Strategy

Border to Coast has **conducted a comprehensive review of the climate risk drivers** potentially affecting its investee companies, along with the nature of the impact, time horizon and scale of impact. This was prepared utilising internal capabilities along with third-party data and analytics providers. It then assessed how these risks could impact Border to Coast itself and developed a management approach to each of the

32 Border to Coast Pension Partnership, 2024, Climate Change Report 2023-2024, https://www.bordertocoast.org.uk/wp-content/uploads/2024/07/Border-to-Coast-Climate-Change-Report-2023-24.pdf

Table 3. NGFS scenarios characterised by transition and physical risks

| Category | Scenario | Physical Risk | Transition Risk | | | |
|---|---|---|---|---|---|---|
| | | Policy Ambition | Policy Reaction | Technology Change | Carbon dioxide removal | Regional policy variation |
| Orderly | Net Zero 2050 | 1.5°C | Immediate and smooth | Fast change | Medium use | Medium variation |
| | Below 2°C | 1.7°C | Immediate and smooth | Moderate change | Medium use | Low variation |
| Disorderly | Divergent Net Zero | 1.5°C | Immediate but divergent | Fast change | Low use | Medium variation |
| | Delayed Transition | 1.8°C | Delayed | Slow/Fast change | Low use | High variation |
| Hot House World | Nationally Determined Contributions (NDCs) | ~2.5°C | NDCs | Slow change | Low use | Low variation |
| | Current policies | 3.0°C+ | None-current policies | Slow change | Low use | Low variation |

Low risk Moderarte risk Higher risk

Colour coding indicates whether the characteristic makes the scenario more or less severe from a macro-financial risk perspective

Source: Border to Coast, 2023-24 Climate Change Report

risks. Additionally, the pool assessed climate opportunities and how these can be accessed, including through a Climate Opportunities Fund.

In 2022, the firm evaluated the **climate scenarios** provided by MSCI. Using the Climate Financial Risk Forum's (CFRF) selection framework[33], they assessed the available options and chose the Regional Model of Investment and Development (REMIND) scenarios developed by the Network for Greening the Financial System (NGFS)[34]. In 2023, Border to Coast carried out scenario analyses to assess changes to both transition and physical risk drivers. Multiple climate scenarios were modelled across various temperature rise pathways, with associated impacts identified, the analysis further unpicked the impacts down to sectoral level.[35]

Utilising MSCI's Climate Value at Risk[36] data-set proved useful in **heat-mapping which sectors might experience losses or gains from the transition** (see Table 4). This helped understand the dynamics across sectors in the scenarios being reviewed. Carbon screens were used to further augmented this process by highlighting the largest emitters and potential stranded assets. In fact, each of the largest emitters undergoes an additional carbon risk assessment, which provides an analysis of their transition plan credibility.

**Scenario analysis can be a useful guide to potential future outcomes, however it does not predict the future.** All forecasting has intrinsic limitations, the inherent complexity of climate impacts on a complex global economy is fiendishly difficult to precisely predict. **Government policies and the quality of international cooperation are critical unknowns**. Climate scenario modelling is ultimately

33 FCA, CFRF, 2022, "Scenario Analysis Guide for Banks", https://www.fca.org.uk/publication/corporate/cfrf-guide-2022-scenario-analysis-banking-guide.pdf

34 NGFS, Online Scenarios Portal, https://www.ngfs.net/ngfs-scenarios-portal/explore

35 Border to Coast Pension Partnership, 2024, Climate Change Report 2023-2024, https://www.bordertocoast.org.uk/wp-content/uploads/2024/07/Border-to-Coast-Climate-Change-Report-2023-24.pdf.

36 MSCI, 2020, "Climate Value-at-Risk", https://www.msci.com/documents/1296102/16985724/MSCI-ClimateVaR-Introduction-Feb2020.pdf

Table 4. Impact of 1.5°C (Disorderly - Divergent Net Zero) scenario on equities

| Sector | Policy Risk | Physical Risk | Technology Opportunities |
|---|---|---|---|
| Communication Services | | | |
| Consumer Discretionary | | | |
| Consumer Staples | | | |
| Energy | | | |
| Financials | | | |
| Health Care | | | |
| Industrials | | | |
| Information Technology | | | |
| Materials | | | |
| Real Estate | | | |
| Utilities | | | |


Source: Border to Coast, 2023-24 Climate Change Report

relatively new and the methodologies' underlying assumptions and supporting data are all still evolving and have the potential to significantly impact the models' output.

Due to these limitations Border to Coast **favours using the Net Zero Investment Framework (NZIF)**[37] **to assess Paris alignment** because it is more robust and transparent. Scenario analysis will continue to be an input into investment decisions and engagement efforts and its continued evolution will be monitored.

### E3. Risk Management

Border to Coast aims for portfolio managers to **treat climate risk as any other investment risk,** for example labour, geopolitical or tax risks. Portfolio managers fundamentally need to understand what the risks are and exercise discretion in how they integrate them into the investment rationale for holding. Using climate analysis helps check the investment rationale of holdings and offers a fresh perspective.

**Climate change is a two-sided coin.** There are clear risks that need a structured mitigation approach, however there are also investment opportunities and there should be a strategy to access these as they arise.

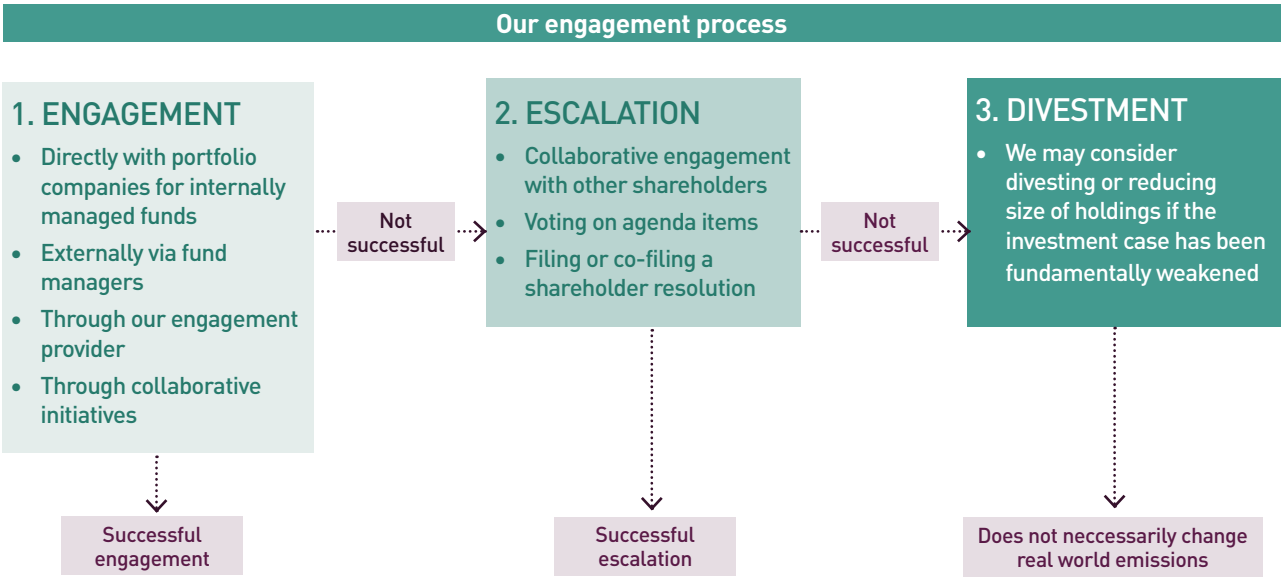
**Decarbonisation relies primarily on portfolio companies' carbon reduction plans.** Divestment is considered as a last resort[38], and where the investment case has been fundamentally weakened. Having a solid process of data analysis, constructive engagement and where necessary, escalation[39] with the possibility of divestment is key. Because fundamentally real-world emissions reductions need to take place, premature divestment can lead to "paper decarbonisation" of portfolios.

37 IIGCC, 2024, "Net Zero Investment Framework 2.0", https://www.iigcc.org/resources/updated-net-zero-investment-framework-nzif-2.0

38 Border to Coast Pension Partnership, 2022, Net Zero Implementation Plan, https://www.bordertocoast.org.uk/wp-content/uploads/2022/10/Border-to-Coast-Net-Zero-Implementation-Plan-Oct-2022.pdf

39 Escalation plans now form part of the requirements for sustainable funds labeled under the Sustainability Disclosure Requirements (SDR) published by the FCA in Nov 2023.

Figure 4. Border to Coast Escalation Plan




Source: Border to Coast, Net Zero Implementation Plan

### E4. Metrics and Targets

**Metrics should be chosen on the basis of quality and availability.** They also needed to be comparable across peer groups. Most of the metrics relate to GHG emissions, either on an absolute or intensity basis. Data estimation metrics and net zero alignment are also used.

**Net zero targets** were set on financed GHG emissions as a proxy for transition risk and on net zero alignment (including engagement targets) as an indicator of the intended transition of underlying holdings. This combination allows for both a future orientated perspective while monitoring progress already achieved.

**Transition risk is very nuanced and is becoming more complex with increasing geopolitical tensions.** The Russian-Ukrainian conflict has brought shocks across the energy market with fossil fuel producers benefitting. It has also accelerated the deployment of climate solutions, however not just because they help in reducing emissions, but also because they improve security of supply.

## 4.4

## Hymans Robertson: Advice from Advisors

### A. Key stats

- Hymans Robertson is a consultancy advising on pensions and investments.
- They have advised on TCFD since 2020
- Advised 10-15 LGPS funds in the UK on TCFD disclosures.

## B. Initiating the TCFD process

**Start with a quick gap analysis** of what your scheme is already doing on climate risk and RI governance in general and compare this with TCFD recommended disclosures. It might be surprising how many of the requirements are already in place or need minor modifications.

Next **consider which projects already being pursued could be augmented with additional climate analysis**, for example, an actuarial review of liability positioning could fairly easily be upgraded to use climate scenario analysis - a key tool in understanding climate risk exposure. Similarly, a regular governance review could include reviewing the relevance of climate to investment beliefs.

## C. How are responsibilities best spread across the team

**Set up a "task and finishing group"** which can lead on the TCFD project internally. It is easier to work in smaller teams, volunteers will typically already possess some of the required knowledge for the task. This team can be temporary and be disbanded, e.g. after two years, at which point responsibilities across the existing governance structure should be established.

Working groups are the most common approach LGPS take, although in some instances whole committees are involved which can slow down the process and burden some committee members who in fact don't want to or don't need to be involved. Sometimes committees will delegate TCFD preparation to officers who will work with advisors on building out a solution. This can then come back to the committee for approval.

**According to a recent survey, a quarter of pension funds have at least one dedicated Responsible Investment staff member.** They are typically focused on governance and stewardship with external advisors and data providers helping with more complex tasks requiring specialist knowledge or tools. A general rule of thumb is that **anything that benefits from economies of scale should be outsourced** (e.g. corporate GHG data gathering).

## D. How to get the most out of TCFD

**Don't get distracted by the technical strategy (e.g. scenarios) and metrics and target sections.** The numbers are important to collect, however, what they mean in terms of climate risk and your risk management response driven by your governance structure is much more important.

**Keep focused on the purpose of the TCFD, which is proper risk management.** Use the data, even if it is incomplete, to identify key issues you can manage, for example, funding buffers, individual mandates and drilling down on key sources of risk.

When preparing the TCFD report itself, it is useful to **highlight case studies** of where you have identified a source of climate risk and the actions taken to manage it.

**The main value-add from applying the TCFD framework lies in the ongoing conversations** and reviews, both internally and with external partners, that can

generate insight and identify pockets of risks to be managed and opportunities to be exploited. These conversations may be difficult to have in the first year when the focus might be primarily placed on setting up data and reporting processes, while also conducting foundational training internally.

**Understanding the key concepts and dynamics is, in fact, crucial to being able to get value from the climate review.** It allows the committee to look through the imperfect numbers and see the big picture. Have clarity on your stance regarding climate issues, through explicit investment beliefs regarding climate change, even if they are contrarian.

**Setting targets will help following up with investment managers on progress**. The Pensions Regulator (TPR) in its recent review[40] of market practice has stated that it would like to see more details on short-term actions trustees intend to take to achieve their mid- and long-term targets.

**LGPS funds and pools are uniquely positioned to take advantage of climate investment opportunities.** Their size, diversity of asset classes as well as very long-term investment horizons mean that they can enter spaces where typical fund managers may struggle to build a business case for entering. They also have the capacity to crowd in other investors who would consider pension funds as keystone partners in complex transactions.

## E. Learnings from TCFD core disclosures

### E1. Governance

**The key is having explicit roles, responsibilities and processes in place. Document these.**

**Assign responsibilities across the existing governance structure.** Aim to delegate responsibilities effectively, consider whether a standing RI or climate committee is indeed necessary. It may be more efficient to have one board member with explicit knowledge of climate change. Ensure oversight and objectives for everyone involved, including strategic objectives of consultants and investment managers. **No fundamental changes to governance are expected** as climate issues should slot into traditional risk management and oversight processes.

Expect to **update investment beliefs and the training schedule** to cover climate and possibly communications. This may be an opportunity to expand learning to other sustainability topics, such as nature, development issues, and general RI updates. However, **be careful not to allow for scope creep! Starting with a gap analysis will help maintain focus.** Prioritise the most important improvements, scheduling non-critical elements to be developed on an iterative basis.

### E2. Strategy

**Having identified which risk drivers can affect the fund, test how they will change under different scenarios.** This will offer an **understanding of the scale and**

40 TPR, 2024, "Review of climate-related disclosures by occupational pension schemes 2024", https://www.thepensionsregulator.gov.uk/en/document-library/research-and-analysis/review-of-climate-related-disclosures-year-2

**probability of impacts** and help gauge the appropriate scale of response. Documenting and reporting your responses to these risks is a key value add of TCFD.

**There are a number of areas outside the investment process which are relevant,** including long-term funding strategy, contributions, date of self-sufficiency, and sponsor covenant. The **overall aim here is to make the LGPS strategy more resilient**.

**Climate issues can impact the sponsor covenant**. When assessing transition and physical risks, assess their impact on the sponsor's business model resilience. LGPS should engage the sponsor to understand what steps they have taken to address climate issues and integrate this into their analysis.

**It is not always clear what to do with the numbers!** Some of the scenario results or GHG footprints are fairly meaningless without context. Comparing them to an industry benchmark or over time can be helpful in understanding what the numbers mean.

**Qualitative scenario analysis**, where different future paths are considered, **is proving more insightful** than reviewing a set of numerical variants with varying degrees of certainty around them. Hymans Robertson has developed a case around a "food shock". This allows for thinking through the economic and government responses and war-gaming how fund risk management and strategy hold up. Ultimately, you are trying to see whether **under a plausible shock, you would have wished to have done things differently.**

### E3. Risk Management

For large, diversified investors like pension funds, **climate risk will likely manifest as a risk multiplier.** Consider how the risks already present in your risk register could be compounded by climate issues or create new risks. e.g. is there a large exposure to high emitters with poor transition plans?

**Aim to break down the short-, medium- and long-term risks and assess their probability and size.** A solid transition plan should assess risks and opportunity exposures of the whole investment approach, from overall strategy to asset-level mandates. Then overlay a net zero alignment assessment coupled with engagement policies.

**Understanding what is driving the headline numbers is crucial**. E.g. is a higher GHG footprint due to holding one particularly carbon-intensive name or being overweight a specific sector? And further engaging with your investment manager on whether they are aware of this exposure and if it is already being properly managed.

**Use various sources of data** to get to the right conclusions: investment managers, data providers and industry initiatives (e.g. Transition Pathway Initiative).

Once issues are identified, **determine and implement a management strategy**. Hymans Robertson suggests four categories of responses:

- *Avoid*, e.g. through exclusionary strategies
- *Reduce*, e.g. through dual mandate tilted strategies which minimise climate risk exposure or add climate opportunities as a thematic feature

- *Mitigate*, e.g. through stewardship and investment manager engagement
- *Accept and monitor.* As a systemic risk climate change cannot be removed entirely, however appropriate risk management systems should allow for monitoring at minimum

### E4. Metrics and Targets

**No single metric can deliver the whole picture.** As with investment in general, a combination of indicators is required to develop a well-rounded picture of how climate issues can impact a pension fund. Metrics do however need to be decision useful, meaning they should support decisions on capital allocation, engagement as well as help demonstrate real-world impact of these decisions.

**Two categories of metrics are proving to be most effective** in assessing risk exposure. One type relates to identifying the source of emissions: these include GHG footprints and intensity metrics. The second type are alignment metrics: these are forward-looking assessment of what a company or indeed whole portfolio is planning to do next. These metrics range from target assessments to implied temperature ratings to transition pathway alignments.

## 4.5

## Further Considerations

**Time and resources spent on reporting should be proportionate** to the risk exposure and related activities. For smaller LGPS funds, once the general framework is understood TCFD reporting may be fairly light touch. TPR[41] itself recommends keeping reporting as concise as possible and reusing previous years' content where updates are not required. It also acknowledges that **climate risk is likely to be less material to DB schemes that are well funded** with assets closely matching their liabilities compared to DC or open and immature DB schemes.

**Done properly, integrating climate change should improve risk-adjusted returns** by incorporating financially material investment factors helping to identify broader risks leading to better-informed investment decisions. TCFD, as well as the IFRS S2 which may soon replace it, is concerned solely with financially material climate issues as they affect the organisation (known as *'single materiality'*), which is squarely aligned with the fiduciary duty of pension trustees and LGPS administering authorities[42]. This is a fundamentally narrower view than *'double materiality'* which also includes the effects of the organisation on climate, and in general is the purview of sustainable funds with additional environmental or social objectives.

**Consider publishing a simplified summary of key messages for pension members.** This was seen as helpful in TPR's 2024 Review,[43] as nuances relating to risk management and governance may not be appropriate for non-expert audiences.

41 TPR, 2024, "Review of climate-related disclosures by occupational pension schemes 2024", https://www.thepensionsregulator.gov.uk/en/document-library/research-and-analysis/review-of-climate-related-disclosures-year-2

42 Principals for Responsible Investment, 2019, "Fiduciary duty in the 21st century", https://www.unpri.org/fiduciary-duty/fiduciary-duty-in-the-21st-century-final-report/4998.article

43 TPR, 2024, "Review of climate-related disclosures by occupational pension schemes 2024", https://www.thepensionsregulator.gov.uk/en/document-library/research-and-analysis/review-of-climate-related-disclosures-year-2

**Finding a highly accurate number for 'climate value-at-risk' (CVAR) might not be possible**, however, it is still possible to be estimated and its trend followed over time. CVAR should be seen as part of a comprehensive approach to risk management, incorporating multiple factors. These can include assessing transition pathways for companies and whole sectors, identifying high emitters and conducting scenario analysis which will together give a general picture of where the key pockets of risks and opportunities lie. Off-the-shelf CVAR reports can also be useful and their quality is improving relatively quickly, however, it is important that users familiarise themselves with their methodologies and key assumptions[44].

**Targets should ultimately be set against main risks proxies**, bearing in mind that GHG emissions are not very well correlated with climate risks or opportunities[45]. TCFD guidance on metrics and targets[46] suggests a number of areas for additional targets, a summary table of which can be found in the Appendix. Furthermore, targets should be set against levers of change, the organisation should have agency over delivering against the KPIs it is setting targets against.

**The actions stemming from the analysis and progress on targets are more important than improved disclosure**. Identifying pockets of risk should inform engagement with investment managers, risk management procedures, direct and collaborative engagement prioritisation, and voting. This is an iterative process where one element informs another and helps **gauge whether the level of response** to climate issues is appropriate or whether it needs to be scaled up or dialled down.

**Shop around for data providers.** Smaller companies may be able to deliver cheaper GHG footprints that are of sufficiently good quality. Larger data providers will provide additional services and analysis fairly seamlessly once onboarded, however, at a higher price point. It may be advisable to speak to similar sized peers on providers they have worked with, as often offerings are tailored to organisations of a particular size. The Climate Finance Risk Forum (CFRF) hosted by the FCA and PRA produced a useful list[47] of data providers which can act as a starting point.

In its Strategy section, point b) the TCFD recommends that organisations operating in a country that has itself a net zero target[48] should also set an aligned target themselves and **establish a transition plan.** HM Treasury has established a Transition Plan Taskforce (TPT), which provides guidance on building transition plans, including specifically for asset owners[49]. TPT concluded its work in October 2024 and transferred its materials and frameworks to the IFRS Sustainability Knowledge Hub.

**As part of engagement efforts, policy advocacy should also be considered**, particularly in situations where improvements in assets' climate risk exposure are restricted by more structural issues than lack of action on the investee's part. In such situations, broader policy progress is required. Policy engagement can take the form of

44 ibid.

45 2Degrees Investing Initiative, 2015, "Carbon intensity ≠ carbon risk exposure. Discussion Paper.", https://2degrees-investing.org/wp-content/uploads/2015/11/Carbon-intensity-vs.-carbon-risk-exposure-November-2015.pdf

46 TCFD, 2021, "Guidance on Metrics, Targets and Transition Plans", https://www.fsb-tcfd.org/publications/

47 CFRF, 2022, "Illustrative list of climate risk data providers and tools/data/products for financial institutions" (XLS) - https://cgfi-dev1.cgfi.ac.uk/climate_narrative/climate_narrative/climate-financial-risk-forum-climate-risk-product-providers-latest.xlsx

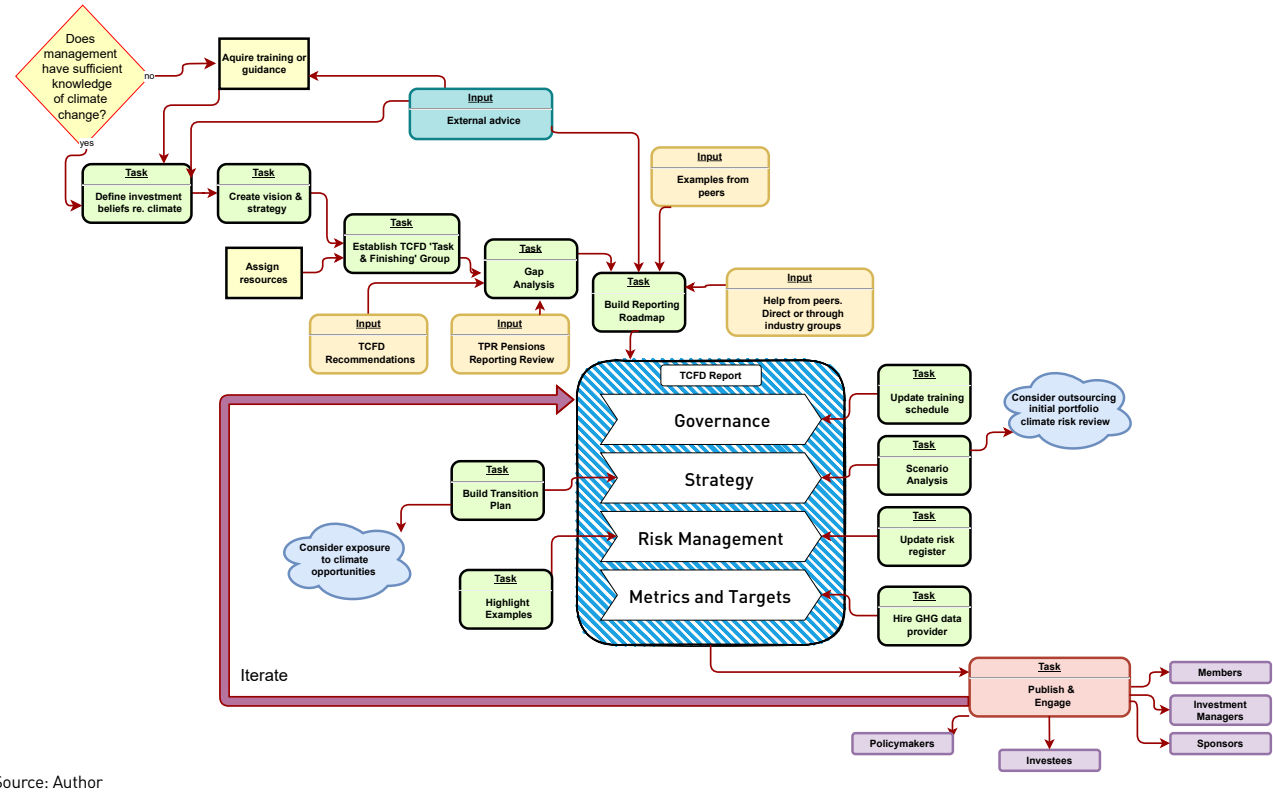
48 See Net Zero Tracker for list of countries and regions that have set Net Zero targets: https://zerotracker.net/countries/united-kingdom-cou-0043

49 IFRS, Transition Plan Taskforce resources, https://www.ifrs.org/sustainability/knowledge-hub/transition-plan-taskforce-resources/

consultation responses, direct or collaborative meetings with policymakers, contributing to open letters and participation at industry events.

**Responding to climate issues is both a matter of the quality of analysis and timing.** The TCFD process will help with understanding the fund's exposure to climate risks, their risk transfer drivers and timescales, however, it will ultimately be the decision of the investment committee on how and when to react. Both active and passive approaches carry risks. Good quality analysis of these risks can reduce the amount of overall uncertainty, helping make more accurate decisions.

Figure 5. Summary of LPGS learnings.




Source: Author

## THINGS TO AVOID*:

- Getting bogged down in the numbers.
- Tackling everything at once.
- Lumping all training into one long session.
- Reviewing climate in complete isolation.
- Distributing work across the whole organisation, instead of creating a task team.
- Treating this as a tick box, and missing the value-add of better risk management and finding good investment opportunities.
- Getting distracted by data gaps. There is much insight to be gained even without perfect data.

* Extract from interview with Hymans Robertson

# 5. EMERGING TOPICS IN SCENARIO WORK

Photo by Bob Brewer on Unsplash

## 5.1

## Applying Scenarios: Challenging Unknown Knowns

Through the exercise of stress testing pension funds under different future pathways the FSB, and subsequently national regulators, saw an opportunity to strengthen the resilience of the financial system to climate-related economic shocks. The 'Strategy' section of TCFD in point c) requests a description of the resilience of the organisation's strategy under various scenarios. This forms a critical part of the framework, however, it was acknowledged early on that although an integral part of the requested disclosures, scenario analysis is fundamentally complex and difficult and remains the least disclosed area[50].

In order to support preparers in conducting scenario analysis, shortly after the publication of the main TCFD recommendations a technical supplement[51] was published on how to conduct this work. It specified a generalised framework which for a pension fund, assuming appropriate governance structures for risk management are in place, would consist of:

A. **Identifying potential risk transfer vectors and associated variables.** Narrowing down the impact of climate shocks to a manageable list of key variables allows for treating these as both proxies for determining which scenario is materialising and using them to test underlying assumptions in the pension fund (e.g. price of electricity, price of GHG emissions, labour productivity, life expectancy). The list should include both transition risks (technology, policy) and physical climate impacts.

B. **Estimating the range of values these variables can take** under different scenarios. For example, a < 2°C scenario would likely see a carbon price of >$150/tCO2, while in a business-as-usual scenario this may be $50/tCO2. The realistic maximum and minimum values are important to set because they narrow down and make manageable the scale of impacts needed to be considered. Understanding the scale of impacts of climate shocks will make them manageable and less nebulous.

C. **Assessing the impact on the pension fund.** This step can be accomplished by grouping variables into scenario narratives (e.g. 'Deep decarbonisation', 'Failed Transition') and either quantitatively analysing their impact on the fund e.g. through an optimiser model or qualitatively 'war-gaming' a climate shock and thinking through how the risk transfer vectors would affect the fund. For a real economy business, TCFD recommends evaluating key business impacts (costs, revenues, supply chain disruption), however for pension funds the assessment should broadly also consider:
   - Investments,
   - Liabilities,
   - Sponsor Covenant.

50 TCFD, 2023, "2023 Status Report", https://assets.bbhub.io/company/sites/60/2023/09/2023-Status-Report.pdf

51 TCFD, 2017, "Technical Supplement, The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities", https://assets.bbhub.io/company/sites/60/2021/03/FINAL-TCFD-Technical-Supplement-062917.pdf

D. **Planning a response.** Having considered the results, identify actions that can be taken to mitigate the impacts of climate shocks on your organisation. These can include changes to portfolio, improvements in investment processes and structured engagement with investment managers, members and the sponsor. Document actions taken and planned, disclose.

An important benefit of going through a scenarios exercise is an explicit understanding of the **implicitly assumed climate base case** being made. Through the TCFD requirements, the regulator wishes to bring these to light, as they can be a source of unmanaged risk, an 'unknown known'. One of the core objectives of the TCFD is to make these underlying assumptions conscious and enforce a consideration of alternative economic states where structural change to large segments of the economy do take place. For example, does the investment assume there will not be a meaningful price on carbon emissions? Or that the technology mix in a given sector is unlikely to change? Experiences of climate transition impacts within the European power utility sector (2013-2015) and global automotive EV sector (2019-2021) indicate that changes in valuations can be both significant and abrupt.

## 5.2

## Choosing Scenarios: Aligning Econometrics with Climate Science

Scenarios can either be **industry standard** or **custom scenarios**. The first are run by public sector organisations who host modelling capabilities and provide an assessment of impacts under various scenarios. e.g. IEA's 450 (low carbon) scenario will detail expected changes in gas demand in different regions in 2030[52]. The TCFD Technical Supplement on scenarios[53] provides a useful comparison of parameters across a number of scenario providers, including CO2 price assumptions, energy demand and solar PV deployment. The macro-prudential regulators' Network on Greening the Financial System (NGFS) has in recent years been very proactive in publicly sharing its climate scenarios based on a range of econometric and climate models. There are seven scenarios mapped against four categories of futures (disorderly; too, little, too late; orderly; hot house world). These four quadrants are in turn based on the inherent trade-off between physical and transition risk.[54]

An alternative to industry standard scenarios are *custom scenarios* which are typically tailor-made with an external consulting organisation which has the requisite modelling expertise. These scenarios allow for more visibility and adjustments to underlying assumptions that are built into the models, of which there are many. Incorporating in-house views as to how various scenarios are likely to pan out (e.g. fund manager opinions on EV uptake rates) makes the whole modelling exercise much more aligned to the underlying investment assumptions of held assets. These models also offer advanced sector and regional granularity which may be required. Utilising custom scenario models does require markedly more resources and expertise to take advantage of their capabilities.

52 International Energy Agency (IEA), 2024, "Global Energy and Climate Model. Documentation - 2024" - https://iea.blob.core.windows.net/assets/89a1aa9a-e1bd-4803-b37b-59d6e7fba1e9/GlobalEnergyandClimateModelDocumentation2024.pdf

53 TCFD, 2017, "Technical Supplement, The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities", page 22

54 NGFS, Scenarios Portal, https://www.ngfs.net/ngfs-scenarios-portal/explore

Which scenarios are chosen is ultimately up to the preparers, however, the TCFD suggests they should include a low carbon scenario (<2°C) and a business as usual scenario (Hot House) and moreover have the following characteristics:

- ***plausibility,***
- ***distinctiveness,***
- ***consistency,***
- ***relevancy,***
- ***be challenging***.

The 2024 review of TCFD responses from occupational pension funds in the UK by TPR[55] has revealed the regulator's concern that a substantial number of scenarios used by pension providers fail on the 'plausibility' requirement by assuming marginal economic damages in scenarios where global heating levels reach what climatologists would describe as 'catastrophic' levels. This is causing a reassessment of which models are being used in the market and a general move from quantitative models to qualitative narratives. For example by applying a shock (a major crop failure) and working through the effects on the pension fund.

The underestimations in quantitative models stem from how they are built and how they are applied. Take their design first. The Integrated Assessment Models typically used in scenario stress testing[56] are built on the assumption of maintaining a system in economic equilibrium that can be perturbed by an external event, after which it will try to rebalance itself and find a new set of prices and quantities across its idealised market segments. For example, introducing a new carbon price will affect energy prices that will have an impact on steel production and subsequently the output of the construction industry. However, these perturbations are by their very nature moderate and the model's design cannot handle shocks that undermine its basic assumptions - e.g. that markets always clear. This makes them unable to foresee or explain the effects of structural shocks that have not happened yet e.g. major migration events caused by agricultural collapse in North Africa, or even events that do often happen today but are also structural in nature, e.g. sovereign debt defaults[57].

The second challenge is the applicability of the models to large, aggregated portfolios. Asset owners have to overcome the added complexity of applying the model results across their portfolios and generating actionable insight. Because many pensions outsource much of the direct investment activities to investment managers actionable insight is typically sought at the level of strategic asset allocation decisions. Econometric models at the asset class scale however risk cancelling out the effects that can be quite substantial at individual asset or even sector levels. Consider, for example, the loss in value of a heavily emitting asset offset by gains of a low carbon competitor in an aggressive policy response type scenario, resulting in the effect at the asset class level being negligible.

55 The Pensions Regulator, 2024, "Review of climate-related disclosures by occupational pension schemes 2024", https://www.thepensionsregulator.gov.uk/en/document-library/research-and-analysis/review-of-climate-related-disclosures-year-2

56 Morgan Stanley Institute for Sustainable Investing, 2023, "Integrating Climate Scenario Analysis into the Investment Process", https://www.morganstanley.com/content/dam/msdotcom/en/assets/pdfs/InstituteforSustainableInvesting-IntegratingClimateScenarioAnalysisintotheInvestmentProcess.pdf

57 Fisher, P. (November 2024). "When the model isn't looking good.", LBIF Financial World, pp. 44-46.

Models that aspire to represent the complexity of the world economy are tremendously complex themselves, those that try to also integrate climate variables are even more so. Although these models can be used to generate actionable insight, a sense check of the results is warranted before they are applied as risk management tools. A number of recent perspectives, notably by The Institute and Faculty of Actuaries[58] and Carbon Tracker Initiative[59] (both referenced by TPR[60] in its market review), highlight the inconsistency of models being used for scenario analysis with climate science. For example, a number of economic studies show that a 6°C rise in global average temperatures would only result in a 10% reduction in global GDP in 2050 vs. a business-as-usual scenario that assumes the absence of climate change, with GDP growth continuing at a subdued clip. Contrastingly, climate scientists consider a 5°C warming "catastrophic and an existential threat to humanity". As an aid, consider that the Last Glacial Maximum (20,000 years ago) coincided with global average temperatures 6°C cooler than they are today[61] and saw the New York area covered in ice several miles thick.

Regardless of the chosen models, TPR encourages[62] pension funds to be clear-eyed on the core assumptions within the models, noting that for example, the NGFS scenarios do not allow for all physical risks, nor for tipping points. Pension funds should also engage with their investment managers on the scenarios that they are using and ensure their selection and application is robust and meets the TCFD requirements.

## 5.3

## Getting timing right: Embedding Scenarios within Strategic Planning

The Department for Work & Pensions describes incorporating climate scenario analysis into an organisation's risk management and strategic planning functions as a way of making pensions more "flexible and robust to a range of plausible futures"[63]. In practice, however, few organisations, including in the financial sector, apply strategic planning tools to the scenarios exercise. This also includes the use of tools related to helping organisations with the timing of their responses. This can result in actions that take place either too early or too late.

In order to make scenario work decision useful it needs to be wrapped in *review and action* processes that will monitor world events and allow for timely responses. **The first stage is a choice of scenarios** that the company believes are the most *plausible* pathways a given type of future can unfold. This should be a storyline that is *internally consistent* and *relevant* to the organisation in the sense that it reflects the in-house convictions of how the world (economy) works, key dynamics at play and most plausible (from the organisation's perspective) pathways of achieving *distinctive* goals.

58 Institute and Faculty of Actuaries, 2023, "The Emperor's New Climate Scenarios", https://actuaries.org.uk/media/qeydewmk/the-emperor-s-new-climate-scenarios.pdf

59 Carbon Tracker Initiative, 2023, "Loading the DICE Against Pensions.", https://carbontracker.org/reports/loading-the-dice-against-pensions/

60 TPR, 2024, "Review of climate-related disclosures by occupational pension schemes 2024", https://www.thepensionsregulator.gov.uk/en/document-library/research-and-analysis/review-of-climate-related-disclosures-year-2

61 National Centre for Atmospheric Research, 2020, "Scientists Nail Down Average Temperature of Last Ice Age." https://news.ucar.edu/132755/scientists-nail-down-average-temperature-last-ice-age

62 Ibid.

63 Department for Work & Pensions, 2022, "Guidance, Aligning your pension scheme with the Taskforce on Climate-Related Financial Disclosures recommendations , Part 3 - Scenario analysis", https://www.gov.uk/government/publications/aligning-your-pension-scheme-with-the-taskforce-on-climate-related-financial-disclosures-recommendations/part-3-scenario-analysis?utm_source=chatgpt.com#fnref:4

The main purpose being to *challenge* conventional thinking. It is good practice at this stage to consider **what is the organisation's base case**, which will guide its strategy and what the **probability estimates are for the other scenarios materialising**.

The next step is to **identify early indicators** (flags), these can overlap with the scenario variables described in the previous section, which can be tracked in order to signal which scenario is unfolding. Regular monitoring and trend analysis allows for timely adjustments to be made both to the firm's strategy and updating the scenarios being used as real-world developments begin to (mis)align with forecasts. Building an indicator dashboard may prove useful.

**Types of Indicators:**

- **Economic Indicators**: Interest rates, GDP growth, market trends.
- **Environmental Indicators**: Temperature rise, carbon prices, renewable energy adoption rates.
- **Technological Indicators**: Innovation adoption curves, cost of new technologies.
- **Policy/Regulatory Indicators**: New legislation, carbon taxation policies, or international agreements.

Once indicators have been designated a decision needs to be made on **trigger points.** Establish a specific threshold, condition or event that will trigger a response (below). This can be a price point (e.g. cost of PV solar in relation to average wholesale electricity prices), or any other threshold on indicators that have been designated as key defining proxies (flags) for a scenario pathway - i.e. those that clearly indicate which future is unfolding. Horizon scanning can be utilised to update the trigger points list as new relevant forces begin to emerge. These trigger points will ensure responsiveness to change.

**Response plans** should be broadly defined ahead of time to ensure timely action is taken. Unfolding events will indicate which scenario has proven to most accurately describe the future. The role of the risk and planning processes is to ensure that as new information comes to light, the organisation's strategy remains up to date and relevant. For pension funds, areas that the strategic planning system should cover include investments, liabilities and the robustness of the sponsor covenant.

# 6. APPENDIX

## Figure A1. Cross industry metrics and related targets

### Examples of Quantified Targets

| CROSS-INDUSTRY METRIC CATEGORY | EXAMPLE CLIMATE-RELATED TARGET |
|---|---|
| **GHG Emissions**<br>Absolute Scope 1, Scope 2, and Scope 3; emissions intensity | • Reduce net Scope 1, Scope 2, and Scope 3 GHG emissions to zero by 2050, with and interim target to cut emissions by 70% relative to a 2015 baseline by 2035 |
| **Transition Risks**<br>Amount and extent of assets or business activities vulnerable to transition risks | • Reduce percentage of asset value exposed to transition risks by 30% by 2030, realtive to a 2019 baseline |
| **Physical Risks**<br>Amount and extent of assets or business activities vulnerable to physical risks | • Reduce percentage of asset value exposed to acute and chronic physical climate-related risks by 50% by 2050<br>• Ensure at least 60% of flood-exposed assets have risk mitigation in place in line with the 2060 projected 100-year floodplain |
| **Climate-Related Opportunities**<br>Proportion of revenue, assets, or other business activities aligned with climate-related opportunities | • Increase net installed renewable capacity so that it comprises 85% of total cpacity by 2035 |
| **Capital Deployment**<br>Amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities | • Invest at least 25% of annual capital expenditure into electric vehicle maufacturing<br>• Lend at least 10% of portfolio to projects focused primarily on physical climate-related risk mitigation |
| **Internal Carbon Prices**<br>Price on each ton of GHG emissions used internally by an organisation | • Increase internal carbon price to $150 by 2030 to reflect potential changes in policy |
| **Remuneration**<br>Proportion of executive management remuneration liked to climate considerations | • Increase amount of executive management remuneration impacted by climate considerations to 10% by 2025 |

Source: TCFD, 2021, "Guidance on Metrics, Targets and Transition Plans"

Figure A2. TCFD Principles for Effective Disclosure

## Principles for Effective Disclosures

**1.** Disclosures should represent relevant information

**2.** Disclosures should be specific and complete

**3.** Disclosures should be clear, balanced, and understandable

**4.** Disclosures should be consistent over time

**5.** Disclosures should be comparable among companies within a sector, industry, or portfolio

**6.** Disclosures should be provided on a timely basis

Source: TCFD, 2017, Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures


Local
Authority
Pension
Fund
Forum