



HM Government

Aligning your Pension Scheme with the TCFD Recommendations

A Guide for Trustees on Integrating Climate-related Risk Assessment and Management into Decision Making and Reporting

Public consultation version - March 2020

The Pensions Climate Risk Industry Group



Pensions Climate Risk Industry Group

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Ministerial Foreword



Guy Opperman MP, Minister for Pensions and Financial Inclusion

Tackling climate change is one of the defining issues of the twenty-first century. It is a top priority for me as Minister for Pensions and Financial Inclusion. I am committed to ensuring all pension scheme trustees do everything they can to act to limit the risk climate change poses to their members' future retirement income. These actions will also have beneficial impacts on our planet. TCFD is the most widely-adopted way in which organisations are managing and reporting climate risk, I want to ensure all trustees have the help they need to align their schemes with its recommendations.

That is why I am delighted that this guidance is being published for consultation. I would like to thank Stuart O'Brien of Sackers, and many others in the pensions industry, and civil society who have worked closely with the Government to create this guidance – written with industry, for industry.

We have come a long way over the past 18 months in terms of pension schemes' governance of climate change as a major financially material risk to their investments. This action places the UK at the forefront of action on this globally.

In 2018, I clarified and strengthened, through regulation, the fiduciary duties of trustees to recognise the present and long-term risk and opportunities of ESG issues, including climate change, to the solvency of DB schemes and the value of members' DC pensions, and act.

In 2019, those regulations came into force, and schemes are now required to document a policy on climate change and other financially-material risks related to ESG, and to update their Statement of Investment Principles accordingly.

The Government's Green Finance Strategy, set an expectation that all large asset owners would be disclosing in line with the recommendations of the Taskforce on Climate-related Financial Disclosures by 2022. However, I am proposing to take powers in the current Pension Schemes Bill to require climate change risk governance and TCFD reporting. We will consult on these requirements later this year and issue further guidance on compliance with final regulations, as quickly as possible.

But my expectation is that schemes do not need regulations in order to start actively managing their exposure to climate change in line with the Taskforce recommendations and reporting on how they have done so. As more and more pension schemes move towards TCFD reporting voluntarily, it is absolutely imperative that trustees have the necessary skills and knowledge to follow the recommendations of the Taskforce.

That is why I welcome this guidance and the subsequent consultation. Pension schemes of all sizes will find helpful tips on how to embed climate change risk governance and identification of investment opportunities. Progressive schemes will find opportunities to show leadership in an area where members are increasingly engaged.

I recognise concerns from some trustees that TCFD is beyond their capability at present. This guidance provides the framework that will help reassure trustees that all schemes,

large or small, can manage exposure to the risk and opportunities of the transition to a low-carbon economy and the risk associated with a dramatically different climate in the future.

It is very important to me that every pension scheme trustee, civil society group, financial institution and indeed pension scheme member feeds their thoughts into the development of this guidance. There is no use in a single point of reference for trustees that does not reflect their requirements and those of the industry as a whole.

To conclude, pensions are all about savings for the long term. As an industry we know that if we don't tackle climate change then the long term future for ourselves and our children will be severely compromised. We need to act.

I look forward to hearing your views.

Foreword by the Chair



Stuart O'Brien, Partner,
Sacker & Partners LLP

Climate change poses an existential threat to our planet and society. We all try to do our bit to reduce our impact on the environment, but the task required to avoid dangerous levels of temperature increases is a collective challenge.

Against this backdrop it might be difficult to see the role trustees of UK pension schemes have to play. Most trustees will have acknowledged the financial risk of climate-related risk on their pension schemes but this is just one of a myriad of issues that trustees need to spend time considering. With a range of potential climate scenarios and highly complex impacts reaching far into the

future, few trustees will have developed concrete plans to quantify and address the risks of climate change or capitalise on the opportunities of the transition to a net zero carbon economy.

However, trustees must act. Regulations require that trustees disclose and report on their climate policies and the Government has made clear its aim that schemes start actively managing their exposure to climate-related risks. Trustees should not approach the regulatory requirements as a tick-box exercise. Policies and risk management processes need to be meaningful for trustees to meet their overarching fiduciary duties, taking account of climate change as a material financial issue.

It is for that reason that the Pensions Climate Risk Industry Group (PCRIG) was formed in 2019: to provide cross-industry guidance to help pension trustees meet their existing legal responsibilities. And it is with great pleasure that we launch this consultation on our new guide, providing practical steps to help trustees comply with their duties to manage climate-related risks.

For many pension schemes this may require new information. However, the process of risk management and setting investment strategies will already be familiar and the guide is designed to help trustees by providing a starting point for the integration of climate issues into existing trustee governance processes.

The guide also provides a framework for TCFD aligned disclosure. For trustees starting out, public disclosure may be a longer-term aspiration, but the process of following the TCFD recommendations, as set out in the guide, should provide a useful approach to assessing climate-related risks, enabling trustees to set a more resilient investment strategy for the benefit of their members.

Finally, over the page is a list of acknowledgments of all those members of PCRIG who have so generously given of their time to produce this guide. Without the contributions of each and every member of the group, production of the guide would not have been possible. In addition to this many more have provided their input along the way and I am grateful to all the trustees and professional advisers who have contributed and shared their wisdom and experience so far. We look forward to hearing the wider views of industry during the consultation.

Acknowledgements=

The members of the Pensions Climate Risk Industry Group are:

Stuart O'Brien (Chair)	Sacker & Partners LLP
Edward Baker	Principles for Responsible Investment
Andrew Blair	Department for Work and Pensions
Alexander Burr	Legal and General Investment Management
Steven Catchpole	Aviva
Megan Clay	Client Earth (seconded to DWP until February 2020)
Claire Curtin	Pension Protection Fund
Caroline Escott	Pensions and Lifetime Savings Association
Benjamin Fagan-Watson	Department for Business, Energy and Industrial Strategy
David Farrar	Department for Work and Pensions
Adam Gillett	Willis Towers Watson
Paul Hewitt	Vigeo Eiris
Melanie Jarman	The Pensions Regulator
Mark Jeavons	Aon
Claire Jones	LCP
Amanda Latham	The Pensions Regulator (until February 2020)
Adam Matthews	Church of England Pensions Board
Emmet McNamee	Principles for Responsible Investment
Catherine Ogden	Legal and General Investment Management
David Page	BMO Global Asset Management
Russell Picot	Special Adviser to the TCFD
Nadine Robinson	Climate Disclosure Standards Board
David Russell	Universities Superannuation Scheme
Matt Scott	Department for Business, Energy and Industrial Strategy (until December 2019)
Nat Smith	Department for Business, Energy and Industrial Strategy
Peter Uhlenbruch	Share Action (Asset Owners Disclosure Project)
Faith Ward	Brunel Pension Partnership

About this consultation

This consultation brings forward non-statutory guidance for the trustees of occupational pension schemes on assessing, managing and reporting climate-related risks.

Sections of the guidance may be of interest to others, including managers of funded public sector schemes.

This follows the Green Finance Strategy announcement of July 2019 that the Government and The Pensions Regulator had jointly established an industry group to develop TCFD guidance for pension schemes and would consult on the guidance.

Who this consultation is aimed at

- pension scheme trustees and managers;
- pension scheme members and beneficiaries;
- pension scheme service providers, other industry bodies and professionals;
- civil society organisations; and
- any other interested stakeholders

Purpose of the consultation

This consultation seeks views on non-statutory guidance. Any moves to put the guidance onto a statutory footing will be subject to separate consultation.

Scope of consultation

As non-statutory guidance, the guidance is aimed at pension schemes in both Great Britain and in Northern Ireland. References to Great Britain legislation are to be taken, where necessary, as including the corresponding Northern Ireland legislation.

Duration of the consultation

The consultation period begins on 12 March and runs until 2 July 2020. Please ensure your response to the draft guidance reaches us by that date as any replies received after that date may not be taken into account.

How to respond to this consultation

Please complete the online questionnaire which accompanies this draft guidance.

Alternatively, if you wish to submit information which cannot be provided via a web form, please send your consultation responses to:

Pensions Climate Risk Industry Group
c/o Sacker & Partners LLP
20 Gresham Street, London, EC2V 7JE

Email: pensions.governance@dwp.gov.uk

Final guidance

We will aim to publish final guidance in the Autumn of 2020.

Our response will summarise the responses to this consultation.

Freedom of information

The information you send us may need to be passed to colleagues within the Department for Work and Pensions, published in a summary of responses received and referred to in the published consultation report.

All information contained in your response, including personal information, may be subject to publication or disclosure if requested under the Freedom of Information Act 2000. By providing personal information for the purposes of the public consultation exercise, it is understood that you consent to its disclosure and publication. If this is not the case, you should limit any personal information provided, or remove it completely. If you want the information in your response to the consultation to be kept confidential, you should explain why as part of your response, although we cannot guarantee to do this.

To find out more about the general principles of Freedom of Information and how it is applied within DWP, please contact the Central Freedom of Information Team:

Email: freedom-of-information-request@dwp.gov.uk

The Central FoI team cannot advise on specific consultation exercises, only on Freedom of Information issues. Read more information about the [Freedom of Information Act](#).

PART I - Introduction

1. How to use this guide

- This guide aims to help trustees evaluate the way in which climate-related risks and opportunities may affect their strategies by making use of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).
- Trustees should familiarise themselves with the framework of this guide and the separate “Quick Start Guide”.
- Part II of the guide sets out a suggested approach for the integration and disclosure of climate risk within the typical governance and decision-making processes of pension trustee boards. This focuses on how trustees might usefully consider climate-related risks and opportunities.
- Whilst the guide covers disclosure (as recommended by the TCFD), it is recognised that for many pension schemes this will be a new exercise, which may require new processes and information. Trustees may wish to use this guide to prioritise the adoption of robust governance procedures as a first step, with public disclosure as a second step. Where trustees do disclose, this guide seeks to align trustee governance and decision-making processes with the TCFD recommended disclosures.
- Part III of the guide contains technical details on recommended scenario analysis and metrics that trustees may wish to consider using to record and report their findings. Whilst many trustees will ask their professional advisers to work through the detail and advise on implementation, the section contains freely available tools that trustees may use themselves.

1.1 Introduction

1. The Task Force on Climate-related Financial Disclosures (TCFD) is an independent body which has developed recommendations on how organisations can identify and disclose information about climate-related financial risks and opportunities. More detail on the TCFD’s recommendations is set out in Chapter 4.
2. By making use of the recommendations of the TCFD, this guide aims to provide a useful framework and guidance to help trustees of occupational pension schemes evaluate the way in which climate-related risks may affect the strategies and plans of the pension schemes they are responsible for, and then report on this activity to their stakeholders in a consistent and transparent manner.

3. The guidance is aimed at trustees of private sector schemes, but sections of the guidance may be of interest to others, including managers of funded public sector schemes.

1.2 Intended audience

4. Government has set the expectation that all listed companies and large asset owners, including occupational pension schemes, will disclose in line with TCFD by 2022. Amendments made to the Pension Schemes Bill will, if passed, provide a regulation making power for the Government to require prescribed pension schemes to publish climate change related risk information and to impose requirements with a view to securing that there is effective governance of those schemes with respect to the effects of climate change.¹
5. Whilst smaller schemes may not yet be expected to report in line with the TCFD recommendations, most trustees are subject to statutory requirements to specify and disclose their policies on climate change and to carry out risk assessments (see Chapter 3 for further detail). This guide provides a suggested framework that all trust-based occupational pension schemes may find useful in order to develop such policies and integrate them into trustee decision-making. The framework may further assist trustees in demonstrating compliance with their fiduciary duties to take account of financially material factors and to act prudently.
6. Part III of this guide contains technical detail on the climate change scenario analysis that trustees may wish to consider and the decision-useful metrics that trustees can measure. Whilst some of this may be of greatest use to professional advisers and pension scheme providers, it is recognised that the resources available to each pension scheme will vary by scheme size, budget, type of benefits provided and the maturity of the scheme. Trustees can, however, approach this in a proportionate way. Chapter 10, in particular, suggests some freely available tools that trustees can use for basic scenario analysis.

1.3 Structure of this guide

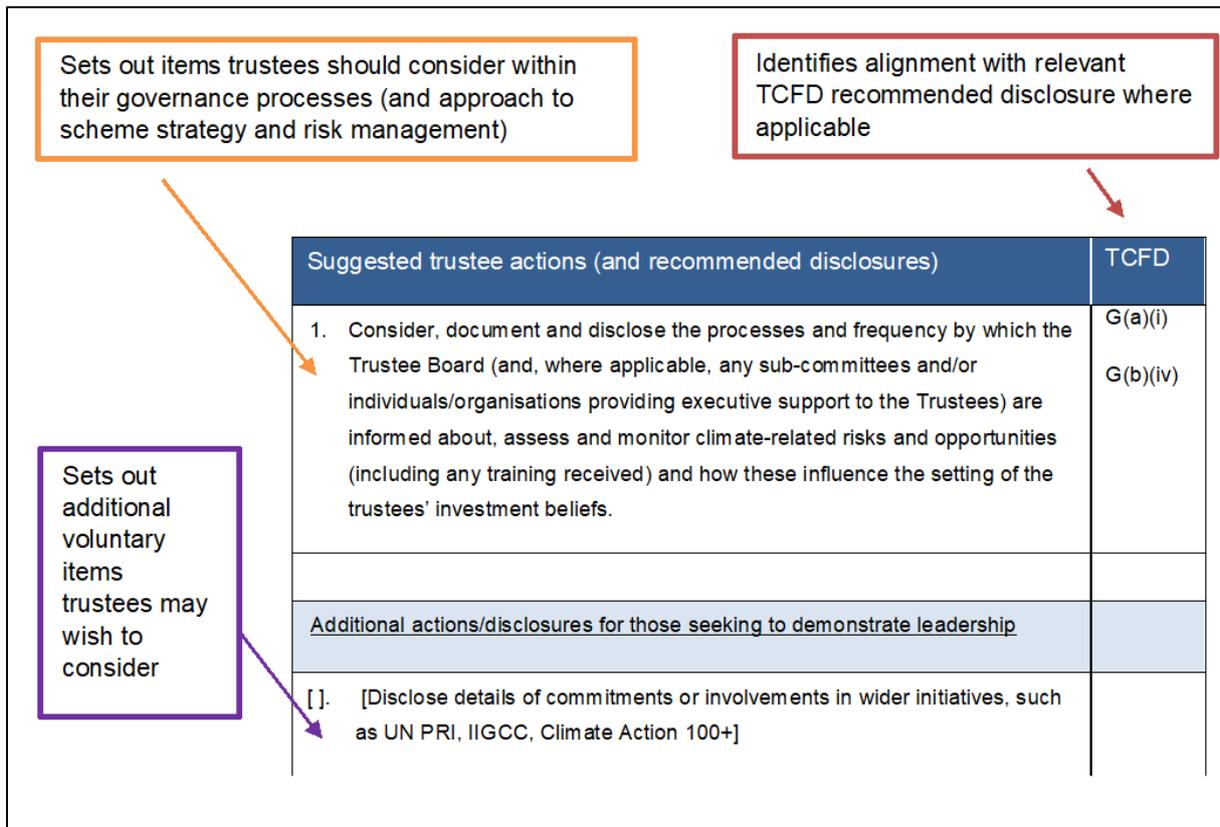
7. This guide is structured sequentially based on the way a pension trustee board might typically approach decision-making. Part I sets out the legal requirements for pension scheme trustees to consider climate-related risk in their decision-making and more detail on the recommendations made by the TCFD.
8. Part II sets out a suggested approach for the integration and disclosure of climate risk assessment in the typical governance and decision-making framework of pension trustee boards, indicating (where applicable) how these align with the TCFD recommended disclosures. Guidance is also provided on how trustees should approach stewardship on climate-related issues, including exercising

¹ [https://publications.parliament.uk/pa/bills/lbill/58-01/004/5801004\(i\).pdf](https://publications.parliament.uk/pa/bills/lbill/58-01/004/5801004(i).pdf)

voting rights, reviewing progress and communicating with members about the actions taken. Chapter 8 provides some additional points for defined benefit schemes to consider, including the incorporation of climate-related risks into the employer covenant assessment.

- Each Chapter in Part II includes a summary table showing the suggested actions and disclosures for that chapter and the relevant TCFD disclosure recommendation.

Figure 1: Guide to the summary tables



- In Part III, the guide sets out how trustees can analyse the resilience of their scheme to different climate-related scenarios, including the transition to a lower-carbon economy. Models are provided for trustees to assess resilience both qualitatively and quantitatively, and recommendations are made as to the metrics and target which trustees can use to help to measure and manage climate-related risk exposure.

- Appendices can be found in Part IV.

2. Introduction - Understanding climate change as a financial risk to pension schemes

- All pension schemes, regardless of size, investments or their time horizons, are exposed to climate-related risks. When considering the financial implications of climate change, trustees should understand the different implications of **transition risks** and **physical risks** on their investments.
- As investors, most schemes have capital at risk as a result of the low carbon transition. In addition, many defined benefit schemes are supported by employers or sponsors whose financial positions and prospects are dependent on current and future developments in relation to climate change.
- The Paris Agreement aims to ensure that the increase in average temperatures above pre-industrial levels is kept to 'well below' 2°C by 2100 and to pursue efforts to limit the temperature increase to 1.5°C. The longer the delay in climate policy action, the more forceful and urgent any regulatory policy intervention will inevitably be and the more severe the likely impact will be on companies and investors.

2.1 The financial risk of climate change

12. The world's climate is already 1°C warmer today², on average, than relative to pre-industrial times and the rate of increase is roughly ten times faster than the average rate of ice-age-recovery warming. The dominant cause for this is extremely likely to be the rapid increase in anthropogenic emissions of greenhouse gases which are now at concentration levels unprecedented in at least 800,000 years.³

13. The average temperature rise conceals more dramatic changes at the extremes and is already having disruptive effects. It is a risk multiplier, exacerbating existing issues with energy, resource and food security and increasing the frequency and intensity of extreme weather events. This is made worse by the size of, and inertia in, the climate system which creates a multi-decadal lag between carbon dioxide emitted today and its full impact, meaning that further warming is already "locked-in" and climate-related risk will grow over time.

² <https://www.metoffice.gov.uk/weather/climate-change/what-is-climate-change>

³ IPCC, Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014 available at <http://www.ipcc.ch/report/ar5/syr/>
See also: <https://climate.nasa.gov/>

“Climate change poses unprecedented challenges... The increase in the frequency and intensity of extreme weather events could trigger non-linear and irreversible financial losses. In turn, the immediate and system-wide transition required to fight climate change could have far reaching effects potentially affecting every single agent in the economy and every single asset price.”

François Villeroy de Galhau Governor of the Banque de France

Bank for International Settlements report: Central banking and financial stability in the age of climate change (2020)⁴

14. All pension schemes are exposed to climate-related risks, whether investment strategies and mandates are active or passive, pooled or segregated, growth or matching, or have long or short time horizons. Many schemes are also supported by employers or sponsors whose financial positions and prospects are dependent on current and future developments in relation to climate change.

Figure 2: Distinct characteristics of climate change that require a different approach⁵



⁴ Bank for International Settlements report: Central banking and financial stability in the age of climate change 2020 <https://www.bis.org/publ/othp31.pdf>

⁵ HM Government: Green Finance Strategy – Transforming Finance for a Greener Future (July 2019) - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf

15. The potential severity of the physical impacts of climate change and its direct correlation with the concentration of greenhouse gases motivated the international community to commit to reducing emissions in Paris in December 2015. The Paris Agreement⁶, an international treaty negotiated by 197 parties, aims to ensure that the increase in average temperatures above pre-industrial levels is kept to 'well below' 2°C by 2100 and to pursue efforts to limit the temperature increase to 1.5°C (Article 2.1(a) UNFCCC, 2015). Restricting global average temperature increases to these levels will require a significant change in the fundamental structure of the economy at national and international levels.

"This Agreement [...] aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by [...] making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."

Paris Agreement, Article 2.1(c) UNFCCC, 2015

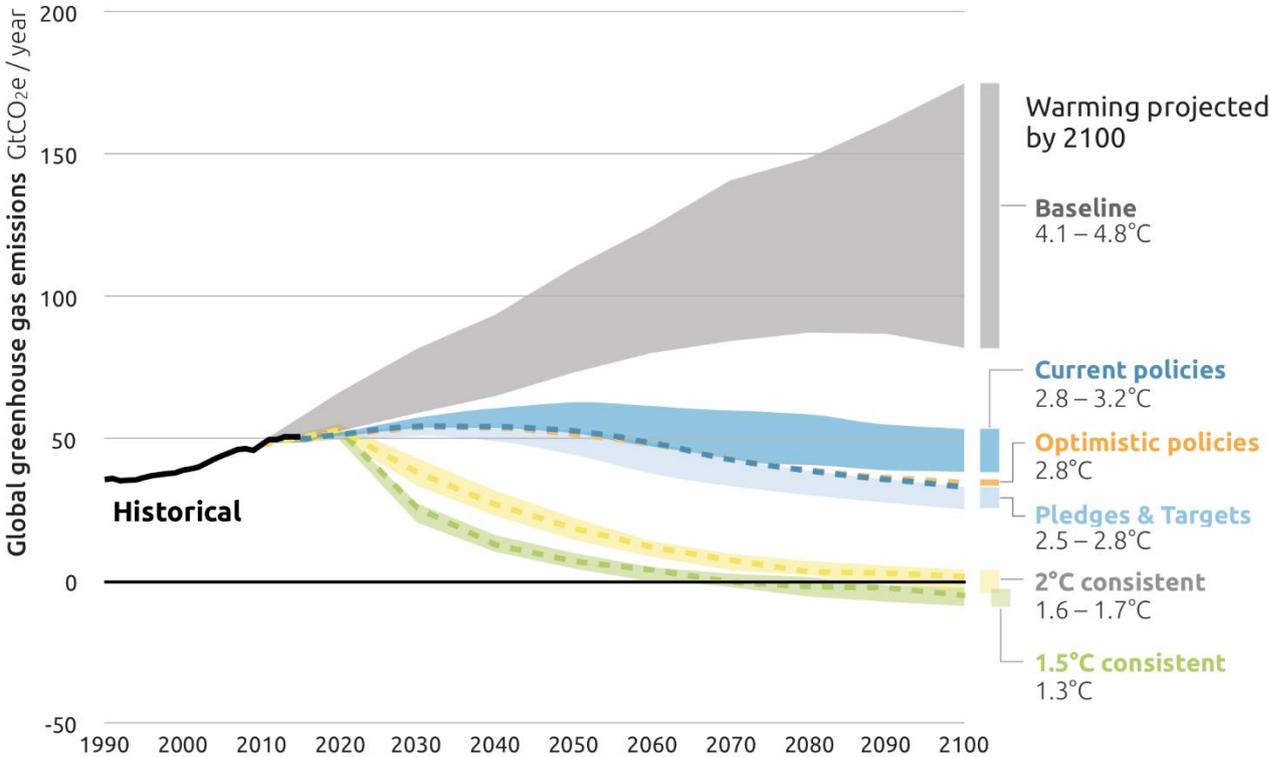
16. This is likely to affect all parts of the economy, especially energy, manufacturing, construction, transport and agriculture. These transformations and the transition to the low-carbon economy create risks for companies that do not plan and adapt adequately and to the pension funds that hold their equity and debt. It may result in 'stranded assets', where the value of certain assets is significantly reduced because they are rendered obsolete or non-performing from a financial perspective.
17. This will be particularly relevant to energy intensive sectors, the fossil fuel-based industries and the wide range of companies and sectors whose current business models are predicated on significant energy use and/or greenhouse gas emissions, most commonly through burning fossil fuels. These companies will be subject to hardening regulatory limits or financial penalties imposed on their activities, replacement by climate-friendly competitors, decarbonisation of the power supply, legal challenges and other non-conventional challenges such as reputational issues resulting from their impact on the climate. Investors will have capital at risk as a result of the low carbon transition.
18. The impact on pension schemes as investors may not be immediately obvious or uniform. For example, whilst the utility sector is one of the most strongly exposed to climate policy risk, it may contribute a relatively small proportion of a typical pension scheme's investment portfolio. On the other hand, manufacturing may have a lower sectoral risk but may constitute a larger part of a pension scheme's portfolio and may therefore have a greater overall effect. Trustees need to consider the impacts across their portfolios as a whole.

⁶ <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

2.2 Types of climate-related risks

- 19. When considering the financial implications of climate change, a distinction can be drawn between **transition risks** and **physical risks**. The former relates to the risks (and opportunities) from the realignment of our economic system towards low-carbon, climate-resilient and carbon-positive solutions (e.g. via regulations or market forces). The latter relates to the physical impacts of climate change (e.g. rising temperatures, changing precipitation patterns, increased risk to coastal systems and low-lying areas from rising sea levels and increased frequency and severity of extreme weather events).
- 20. Perhaps of greatest concern is the significant risk that policy achievement falls short of the Paris Agreement goal, leading to global average temperature increases well in excess of 2°C. Current policies fail to get even close to 2°C let alone the Paris Agreement ambition of well-below 2°C.
- 21. Temperature rises based on current policies (with estimates varying from 2.8 to 3.2°C relative to pre-industrial levels based on the current trajectory) would have large and detrimental impacts on global economies, society and investment portfolios.

Figure 3: 2100 Warming projections - emissions and expected warming based on pledges and current policies



Source: Climate Action Tracker, Dec 2019 update⁷

⁷ <https://climateactiontracker.org/global/temperatures/>

Stranded asset risk

Various research reports have studied the risk of fossil fuel assets becoming 'stranded' assets⁸ which 'at some point prior to the end of their economic life (...) are no longer able to earn an economic return'. This can occur due to a change in policy/legislation, a change in relative costs/prices, or circumstances in the physical environment (e.g. impact of floods or droughts).

Fossil fuels are the most obvious example of assets at risk of stranding and there are already examples of coal mines, coal and gas power plants, and hydrocarbon reserves which have become stranded by the low carbon transition. However, other assets may be affected such as gas pipelines and agricultural assets.

Reports have produced varying estimates of the financial impact based on different future scenarios, some of which could have materially detrimental impacts on investment portfolios. It is therefore in the interest of trustees and boards to explore stranded asset risks in the context of their own portfolios, defining their beliefs and assessing current portfolio exposure.

2.3 The impact of the inevitable policy response

22. With current policies anticipated to lead to temperature increases of around 3°C, the longer the delay in climate policy action, the more forceful and urgent any regulatory policy intervention will inevitably be in order to limit global average temperature increases to a level that's more likely to allow for economic and social stability. This would have a more severe impact on companies and pension schemes as investors.
23. We know now that annual global emissions must start to reduce with a significant annual rate of reduction thereafter⁹. Without this, companies face increased cost and uncertainty from a disorderly low-carbon transition and increased physical risks, and investors face increased risk compared to a scenario where climate policy is enacted smoothly and steadily.¹⁰

⁸ <https://carbontracker.org/terms/stranded-assets/>

⁹ Nature (2017) "Three years to safeguard our climate" 28th June 2017 - <https://www.nature.com/news/three-years-to-safeguard-our-climate-1.22201>

¹⁰ See United Nations Environment Programme Finance Initiative - Investor Pilot (May 2019), capturing the analysis, evaluation and testing of 1.5°C, 2°C, and 3°C scenario-based analysis on the investment portfolios of institutional investors.

2.4 Why trustees cannot assume climate-related risks are already “priced-in”

24. An investor might expect financial market prices – at least in an efficient market – to already reflect the risks presented by a transition to a lower carbon economy and there is some evidence that markets are now partly pricing in climate change risks. However, asset prices may not fully reflect the financial impact of future physical risks or the transition costs associated with policy action required to limit global warming to 2°C or less.¹¹ This is particularly so where “business as usual” models are based on current policies, which are anticipated to lead to temperature increases of around 3°C.

“Climate change is striking harder and more rapidly than many expected.”
World Economic Forum, Global Risks Report 2020¹²

25. There are a number of reasons for this. The future of climate policy is highly uncertain given the extended time horizons and political economy considerations, while forecasting requires very long-term projections. There are also challenges in differentiating between long-term economic effects, what the markets are currently pricing, and the potential market shocks if and when the market re-prices climate risks.

26. Finally, the market pricing of assets will say little about a given investor’s own attitude or tolerance to risk, or the implications of different climate scenarios. Trustees should therefore be wary about relying on marked to market pricing of assets as a measure of climate-related financial risks.

¹¹ BNY Mellon report, Future 2024: Future proofing your asset allocation in the age of mega trends (September 2019) <https://im.bnymellon.com/us/en/documents/manual/brochures/future-2024-abridged-us-final.pdf>

¹² <https://www.weforum.org/reports/the-global-risks-report-2020>

3.The legal requirements on trustees to consider climate-related risks

- Trustees have a legal duty to consider matters which are financially material to their investment decision-making. The climate crisis poses a financial risk to all asset owners. Trustees should consider how, and to what extent, it could impact their investments and the necessary actions that arise from that assessment. This will depend on the investments held and the duration of the scheme. In the case of defined benefit schemes, trustees should also consider potential impacts on their sponsor covenant.
- Trustees have additional statutory obligations to document their policies on material financial factors and to consider and document their approach to risk. These statutory obligations specifically require consideration of climate change.
- The Pensions Regulator considers climate change to be systematically significant to its regulatory regime, including protecting member benefits and reducing calls on the PPF.

3.1 Fiduciary duty

27. Trustees should take advice on their legal duties in the context of specific exercises of investment powers, but may wish to think in terms of three core duties when making investment decisions, as outlined below.

28. In practice day-to-day investment decisions will almost always be delegated to a third party (and in most cases trustees will act on professional advice from investment consultants). However, trustees should be mindful that they retain overall responsibility for securing members' benefits and are required to provide proper oversight of their delegates (including fiduciary managers¹³).

(A) Exercise investment powers for their proper purpose

29. Pension scheme trustees must exercise their investment powers for the purposes for which they were given.¹⁴ The consideration of climate-related risks and opportunities should take place in this context. Trustees should consider how

¹³ See: <https://www.thepensionsregulator.gov.uk/en/document-library/regulatory-guidance/tender-and-set-objectives-for-investment-service-providers/choose-an-investment-governance-model>

¹⁴ Trustees should be mindful of the different duties applying to defined benefit pension schemes (where the trustee duty is to invest the scheme's assets appropriately to pay the scheme's promised benefits) and to defined contribution schemes (where the purpose of the investment power is to provide a "pot" of money to be used by each member to provide for his or her retirement).

properly taking into account climate-related risks and opportunities will assist in delivering on the purpose of the trust (namely for the provision of pension benefits).

30. In a defined contribution scheme trustees must not relegate the consideration of climate change to members via self-select funds. Rather, trustees must consider its relevance as part of their duty to provide both a default fund and self-select funds appropriate to the needs of the membership.

(B) Take account of material financial factors

31. Trustees should always take into account any relevant matters which are financially material to their investment decision-making. These are frequently referred to as “financial factors”.¹⁵ This may well be about whether a particular factor is likely to contribute positively or negatively to anticipated returns. But it may equally be about whether a factor will increase or reduce risk.

32. A wide range of factors may impact the long-term sustainability of an investment, including poor governance or environmental degradation. These can all properly be considered by pension trustees to the extent that they are financially material.

33. Chapter 2 explains in further detail the financial risks of climate change and the low carbon transition. Whenever trustees consider that such factors are financially material to their scheme, they should take them into account in their investment decision-making.¹⁶

34. When considering the financial implications of climate change, trustees should consider the financial implications of both transition risks and physical risks and determine the extent to which they are financially material to:

- in a defined benefit scheme: the scheme’s assets, liabilities and the covenant of the sponsoring employer(s); and
- in a defined contribution scheme: the investment risk and returns of the default fund and any applicable member self-select funds (see below).

35. Where appropriate, trustees should take advice and implement processes to build climate resilience across pension scheme assets.

36. Trustees of schemes providing defined contribution benefits must consider the implications of climate-related risks on any default fund and may also need to consider the extent to which they are taken into account in any member self-select funds (including AVCs). The nature of the funds may dictate which factors are taken into account in the investment processes of those funds. However, trustees should ensure that the funds remain suitable for their members and the

¹⁵ For further detail see the Law Commission’s report on the Fiduciary Duties of Investment Intermediaries (July 2014) <https://www.lawcom.gov.uk/project/fiduciary-duties-of-investment-intermediaries/>

¹⁶ Keith Bryant QC and James Rickards, The legal duties of pension fund trustees in relation to climate change (November 2016) <https://www.documents.clientearth.org/wp-content/uploads/library/2016-12-02-the-legal-duties-of-pension-fund-trustees-qc-opinion-ext-en.pdf>

materials in relation to them are sufficiently clear, including as to climate-related risks.

(C) Act in accordance with the “prudent person” principle

37. Trustee investment powers must be exercised with the “care, skill and diligence” that “a prudent person would exercise when dealing with investments for someone else for whom they feel morally bound to provide”.¹⁷
38. Prudence will always be context specific and will evolve over time. In a defined benefit scheme prudence should be assessed by reference to funding levels and employer covenant and the likely time horizon over which members’ benefits will be paid. In a defined contribution scheme trustees should consider what is appropriate to the membership demographic and the investment objectives of the investment options, including the scheme’s default fund. Trustees should also bear in mind that many members’ pensions will be invested for a long time (including in drawdown/annuity policies) and will be exposed to longer-term risks.
39. The financial risks from climate change have a number of distinctive elements which present unique challenges and require a strategic approach to financial risk management¹⁸. In line with the prudent person principle, trustees must consider likely future scenarios, how these may impact their investments and what a prudent course of action might be as part of their scheme’s risk management framework. Past data may not be a good indicator of future risks.
40. Trustees should also recognise that market standards are evolving in this area and that what may be considered “prudent” in relation to climate-related risks today might no longer meet that standard in the future, given developing understanding of these risks. Trustees should keep matters under review.

3.2 Pensions Legislation

41. Statutory requirements apply to pension trustees in addition to their fiduciary duties. Again, trustees should take advice on their legal obligations but should take note of the following regulatory requirements in particular¹⁹:

¹⁷ Re Whiteley (1896) 33 Ch D 347 at 355

¹⁸ Bank of England Prudential Regulation Authority, Supervisory Statement 3/19: ‘Enhancing banks’ and insurers’ approaches to managing the financial risks from climate change’ (April 2019)

<https://www.bankofengland.co.uk/prudential-regulation/publication/2019/enhancing-banks-and-insurers-approaches-to-managing-the-financial-risks-from-climate-change-ss>

¹⁹ This guidance is aimed at occupational pension schemes in both Great Britain and Northern Ireland. For schemes in Northern Ireland, corresponding Northern Ireland legislation applies.

(A) Effective system of governance including internal controls

42. Section 249A of the Pensions Act 2004 requires that the trustees or managers of pension schemes in scope should have “an effective system of governance including internal controls”, on which The Pensions Regulator must issue a Code of Practice covering matters such as how that effective system of governance:

- provides for sound and prudent management of their activities;
- includes consideration of environmental, social and governance factors related to investment assets in investment decisions; and
- is subject to regular internal review.

43. The Code of Practice must also cover key functions including an effective risk-management function, and the need for trustees to carry out and document their own-risk assessment. Where environmental, social and governance factors are considered in investment decisions, the Code of Practice will also cover how such risk assessment must include an assessment of new or emerging risks, including risks related to climate change, use of resources and the environment (physical risks), social risks and risks related to the depreciation of assets due to regulatory change (transition risks).

[NOTE – At the time of writing the Code of Practice has not been published. This section will be updated to correspond with TPR’s updated Code²⁰, when available]

(B) Disclosure of policies in Statement of Investment Principles

44. For pension schemes to which section 35 of the Pensions Act 1995 applies (broadly, trust-based schemes with at least 100 members), the trustees must prepare a Statement of Investment Principles (SIP). The purpose of a SIP is to set out the trustees’ investment strategy, including their investment objectives and the investment policies they adopt.

45. Trustees must include in their SIPs their policies in relation to risks, including the ways in which risks are measured and managed²¹.

46. Further requirements in relation to the required content of the SIP are included in the Occupational Pension Schemes (Investment) Regulations 2005.²² Specific requirements pertinent to climate change include:

²⁰ <https://www.thepensionsregulator.gov.uk/en/document-library/statements/single-code-of-practice-statement>

²¹ Occupational Pension Schemes (Investment) Regulations 2005, Regulation 2(3)(b)(iii)

²² as amended by the Pension Protection Fund (Pensionable Service) and Occupational Pension Schemes (Investment and Disclosure) (Amendment and Modification) Regulations 2018 and by the Occupational Pension Schemes (Investment and Disclosure) (Amendment) Regulations 2019

- Trustees must, from 1 October 2019, include their policies in relation to:
 - “financially material considerations” over the appropriate time horizon of the investments, including how those considerations are taken into account in the selection, retention and realisation of investments²³. Financially material considerations are defined to include “environmental, social and governance considerations (including but not limited to climate change), which the trustees consider financially material”;
 - the exercise of the rights, including voting rights attaching to the investments, and on engagement activities in respect of the investments, including when and how the trustees would engage with issuers, asset managers, stakeholders and co-investors on matters including the issuer’s strategy, risks, social and environmental impact and corporate governance.
- Trustees must, by 1 October 2020, include their policies in relation to the trustees' arrangements with their asset manager(s), setting out how they incentivise each manager to align its investment strategy and decisions with the trustees' policies mentioned above and to make decisions based on assessments about medium to long-term performance.

(C) Annual Report and Accounts

47. Trustees are required to prepare an annual report and accounts within seven months of the end of each scheme year. Further requirements in relation to the required content of the annual report and accounts are included in the Occupational and Personal Pension Schemes (Disclosure of Information) Regulations 2013.²⁴

48. Trustees should take advice on the timing and content required in relation to their particular scheme, although, broadly in each annual report prepared after 1 October 2020:

- Trustees of defined benefit schemes must include a statement on how their voting and engagement policies have been implemented.
- Trustees of schemes providing defined contribution benefits are required to include a statement setting out how, and the extent to which, all policies have been implemented during the year.

²³ Occupational Pension Schemes (Investment) Regulations 2005, Regulation 2(3)(b)(vi)

²⁴ as amended by the Pension Protection Fund (Pensionable Service) and Occupational Pension Schemes (Investment and Disclosure) (Amendment and Modification) Regulations 2018 and by the Occupational Pension Schemes (Investment and Disclosure) (Amendment) Regulations 2019

(D) Pension Schemes Bill

49. Amendments made to the Pension Schemes Bill²⁵ will, if passed, provide a regulation making power for the Government to require pension schemes to publish climate change-related risk information and further to impose requirements with a view to securing that there is effective governance of the scheme with respect to the effects of climate change. At the time of writing, however, such provisions have not yet been enacted.

The Pension Schemes Bill

Government has tabled an amendment to the Pension Schemes Bill which seeks to amend the Pensions Act 1995. It sets out that:

Regulations may impose requirements on the trustees or managers of an occupational pension scheme of a prescribed description with a view to securing that there is effective governance of the scheme with respect to the effects of climate change.

The requirements which may be imposed by the regulations include, in particular, requirements about

- (a) reviewing the exposure of the scheme to risks of a prescribed description;
- (b) assessing the assets of the scheme in a prescribed manner;
- (c) determining, reviewing and (if necessary) revising a strategy for managing the scheme's exposure to risks of a prescribed description;
- (d) determining, reviewing and (if necessary) revising targets relating to the scheme's exposure to risks of a prescribed description;
- (e) measuring performance against such targets;
- (f) preparing documents containing information of a prescribed description.

Separately:

Regulations may require the trustees or managers of an occupational pension scheme of a prescribed description to publish information of a prescribed description relating to the effects of climate change on the scheme.

It also sets out that

In complying with requirements imposed by the regulations, a trustee or manager must have regard to guidance prepared from time to time by the Secretary of State.

Statutory guidance will be separately developed by Government and consulted on in due course.

²⁵ See [https://publications.parliament.uk/pa/bills/lbill/58-01/004/5801004\(i\).pdf](https://publications.parliament.uk/pa/bills/lbill/58-01/004/5801004(i).pdf) and Supplementary Memorandum from the Department for Work and Pensions <https://publications.parliament.uk/pa/bills/lbill/58-01/004/5801004-DPM-Supplementary.pdf>

Voluntary obligations

Trustees who have agreed to become signatories to voluntary initiatives may have already accepted additional climate reporting obligations.

PRI signatories: the PRI is making some climate indicators mandatory to report to PRI itself but voluntary to disclose publicly. The remaining PRI climate-related risks indicators will stay voluntary with a view to becoming mandatory as good practice develops.

Stewardship Code signatories²⁶: signatories must (principle 4) report on how they have identified and responded to market-wide and systemic risks including climate change, and how they have (principle 7) ensured tenders have included a requirement to integrate climate change to align with the time horizons of clients and beneficiaries

²⁶ <https://www.frc.org.uk/investors/uk-stewardship-code>

4. The TCFD recommendations

- TCFD establishes a set of eleven clear, comparable and consistent recommended disclosures about the risks and opportunities presented by climate change. The increased transparency encouraged through the TCFD recommendations is intended to lead to decision-useful information and therefore better informed decision-making on climate-related financial risks.
- By applying the TCFD recommendations and making the recommended disclosures, pension trustees will be better placed to properly assess and understand what climate change actually means for their particular scheme – and will be better equipped to make decisions that ensure the best outcomes for pension scheme members.

4.1 A lens for understanding climate-related financial risks

50. The Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD) was established as an industry-led initiative in December 2015 to develop recommendations for clear, comparable and consistent disclosures of climate-related risks and opportunities in mainstream financial reports. The TCFD aimed to improve the quality of climate-related financial disclosures thereby “support[ing] more appropriate pricing of risks and allocation of capital in the global economy”²⁷.

51. The TCFD recommendations (issued in June 2017) establish a set of recommended disclosures through which organisations can identify and disclose decision-useful information about material climate-related financial risks and opportunities.²⁸ The recommendations are also applicable to asset owners and asset managers. As of February 2020, 1027 organisations globally had declared their support for the TCFD, representing a market capitalisation of over \$12 trillion²⁹ and extensive work is ongoing across a number of industry and

²⁷ Final Report. Recommendations of the Task Force on Climate-related Financial Disclosures. June 2017, p.v. - <https://www.fsb-tcf.org/publications/>

²⁸ See Appendix [6] (further reading/links) for details of TCFD Report and materials, including the TCFD Knowledge Hub.

²⁹ TCFD Supporters <https://www.fsb-tcf.org/tcf-supporters/>

regulatory groups to support widespread implementation of the TCFD's recommendations.³⁰

52. The TCFD recommendations are structured around four thematic areas that represent core elements of how organisations operate: governance, strategy, risk management, and metrics and targets. These might be considered to apply to pension trustees (as asset owners) as follows:

Figure 4: The TCFD recommendations



Governance - Disclose the trustees' governance around climate-related risks and opportunities

Strategy - Disclose the actual and potential impacts of climate-related risks and opportunities on the pension scheme where such information is material

Risk Management - Disclose how the trustees identify, assess, and manage climate-related risks

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

53. The four core elements of the TCFD recommendations are supported by eleven recommended disclosures set out in the table below. Further guidance provided by the TCFD on the recommended disclosures specific to asset owners is set out in Appendix 1.

³⁰ See, for example, FCA consultation CP20/3: Proposals to enhance climate-related disclosures by listed issuers and clarification of existing disclosure obligations - <https://www.fca.org.uk/publications/consultation-papers/cp20-3-proposals-enhance-climate-related-disclosures-listed-issuers-and-clarification-existing>

TCFD Recommended Disclosures

Governance	Strategy	Risk Management	Metrics and Targets
a) Describe the board’s oversight of climate-related risks and opportunities	a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long-term.	a) Describe the organisation’s processes for identifying and assessing climate-related risks.	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) Describe management’s role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organisation’s businesses, strategy, and financial planning.	b) Describe the organisation’s processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas emissions, and the related risks. ³¹
	c) Describe the resilience of the organisation’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation’s overall risk management.	c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

4.2 Why the TCFD recommendations may be helpful for pension trustees

54. As set out in Chapter 3, pension trustees are already subject to a number of statutory requirements to specify and disclose their policies on climate change, alongside other policies relating to environmental, social and governance (ESG) considerations. Several of the TCFD disclosures align to these existing statutory requirements, including disclosure of trustees’ strategy via their policies on climate change, and their governance, via the requirement for an effective system of governance that includes “consideration of environmental, social and governance factors related to investment assets in investment decisions”.

³¹ Scope 1 GHG emissions are direct emissions from sources that are owned or controlled by an entity. Scope 2 GHG emissions are indirect emissions from sources that are owned or controlled by an entity (e.g. electricity, heat, or steam purchased from a utility provider). Scope 3 GHG emissions are from sources not owned or directly controlled by an entity but related to the entity’s activities (e.g. employee commutes).

55. All the TCFD disclosures are likely to assist trustees demonstrate compliance with their fiduciary duties to take account of relevant factors which are financially material to their investment decision-making and to act prudently.
56. Although the TCFD recommendations focus on “disclosures” by organisations, the framework is fundamentally a useful tool for pension trustees in assessing the relevance of climate change and managing any consequences. This may assist trustees in meeting the legal requirements on considering climate-related risks. It will also be a useful lens for trustees of DC and hybrid schemes as they compile the relevant statement on how they have implemented policies in the SIP, as required from October 2020. In particular, the TCFD’s Strategy (c) recommendation to assess the resilience of their strategies (and by extension portfolio) using scenario-based analysis (see Chapter 10) encourages forward-looking, long-term assessment of the financial implications of climate change.

4.2 Disclosure: the voluntary – for now – ‘D’ in TCFD

57. The disclosure – the ‘D’ - aspect of TCFD is voluntary at present. Failure to publish in line with TCFD would not mean that a scheme was in breach of regulation (though schemes without adequate processes for managing material climate risks might well be). In any event, the increased transparency encouraged under the TCFD recommendations and 11 recommended disclosures is intended to lead to better informed decision-making. More broadly, better quality information contributes towards more efficient and sustainable markets.
58. The voluntary requirement to disclose, however, may change, in light of amendments to the Pension Schemes Bill³² and given the Government’s statement (set out in the 2019 Green Finance Strategy) that all listed companies and large asset owners, including occupational pension schemes, are expected to disclose in line with the TCFD recommendations by 2022.³³
59. This guide will help schemes to lay the groundwork and develop good practice in the meantime.
60. To promote disclosure of “decision-useful” information, the TCFD has outlined seven Principles for Effective Disclosures, which should: 1) represent relevant information; 2) be specific and complete; 3) be clear, balanced, and understandable; 4) be consistent over time; 5) be comparable among companies within a sector, industry, or portfolio; 6) be reliable, verifiable, and objective; 7) be provided on a timely basis.

³² See footnote [20] above.

³³ See Government Green Finance Strategy – Transforming Finance for a Greener Future (July 2019), although note that “large asset owner” has yet to be defined.

PART II - Integrating and disclosing climate-related risks in trustee governance, strategy and risk management

5. Defining climate-related investment beliefs

- Investment beliefs can help focus trustees' investment decision-making and make it more effective. Climate change should be considered as part of these beliefs.
- Trustees should allow appropriate time and training to ensure that they have a sufficient understanding of climate change to define their investment beliefs.
- Trustees should consider the roles and responsibilities within the trustee board (and, where applicable, any sub-committees and/or individuals/organisations providing executive support to the trustees) for climate-related issues.

5.1 Investment beliefs

61. Trustees may find it helpful to develop and maintain a set of beliefs about how investment markets function and which factors lead to good investment outcomes.³⁴ Investment beliefs, developed by reference to research and experience, can help focus trustees' investment decision-making and make it more effective. Climate change should be considered as part of these beliefs. Trustees' investment beliefs should not be confused with their personal (i.e. ethical or moral) beliefs.

62. Trustees should define their climate-related investment beliefs (e.g. about potential future climate change scenarios, how to manage their impacts and take climate-related opportunities). Beliefs should take into account practical circumstances (e.g. scheme size/resources, internally/externally managed assets and preference for an active/passive investment approach).

63. Trustees may wish to consider including in their investment beliefs the trustees' position on the following:

- Clarifying the trustees' position on climate change considerations as part of the trustee fiduciary duty.
- The extent to which the trustees consider market prices reflect climate-related risks and the ability of asset managers to exploit any mispricing.
- Clarifying the trustees' convictions around the balance between engagement, voting and/or divestment as appropriate tools to manage climate-related risks.

³⁴ See TPR Investment Guidance for DB and DC Schemes - <https://www.thepensionsregulator.gov.uk/en/trustees/managing-db-benefits/funding/investment> ; and <https://www.thepensionsregulator.gov.uk/en/trustees/managing-dc-benefits/investment-guide-for-dc-pension-schemes->

- Recognising the way in which climate-related risks can be taken into account (both as a risk and an opportunity) in active/passive mandates and in relation to different asset classes.

64. Trustees should consider the internal consistency of their investment beliefs. For example, trustees of defined contribution schemes who believe in the efficacy for the scheme's default fund of a pure passive market-cap weighted fund with no flexibility to reduce allocations selectively should consider how this will reconcile with strong beliefs in relation to the impact of climate change on markets during the time horizon of the scheme's members. Likewise, trustees who believe in the ability of asset managers to identify and exploit asset mispricing should consider how this reconciles with a view that climate-related risks alone have been adequately "priced in" to company valuations.

5.2 Trustee climate competence: knowledge and understanding required to define investment beliefs

65. Where trustees identify a lack of sufficient understanding of climate-related financial risks to define their investment beliefs on the issue with confidence (or that there has previously been insufficient time allocated on board agendas to it), they should allocate specific time at a future board meeting or an investment strategy session dedicated to climate-related risk issues.³⁵ Trustees should ensure that they allow adequate time to look at the issue in sufficient depth to ensure that they are meeting their legal duties. This might include more detailed sessions on:

- The latest evidence on the investment impacts of climate change and views from investment consultants, asset managers, independent experts and other advisers on how climate-related risks and opportunities have the potential to affect different investment portfolios.
- The trustees' legal obligations to consider and act on climate-related issues (and the extent to which the trustees' policies need to be disclosed or reported on).
- In a defined benefit scheme, the potential impact of climate-related risks on the scheme sponsor's covenant.
- The range of possible actions that might be taken to help manage climate-related risks (and capture the opportunities), including case studies of good practice actions across the investment community. Trustees may also wish to consider the potential impacts if there is an active decision to 'do nothing'.

³⁵ See World Economic Forum (in collaboration with PWC), How to Set Up Effective Climate Governance on Corporate Boards; Guiding principles and questions (January 2019) http://www3.weforum.org/docs/WEF_Creating_effective_climate_governance_on_corporate_boards.pdf.

Investment beliefs - Suggested trustee actions (and recommended disclosures)	TCFD
1. Identify, document and disclose the relevant climate-related investment beliefs and policies of the trustee board, whether these are set by the trustees or a sub-committee (e.g. investment sub-committee) and the frequency of their review.	
2. Consider, document and disclose the processes and frequency by which the trustee board (and, where applicable, any sub-committees and/or individuals/organisations providing executive support to the trustees) are informed about, assess and monitor climate-related risks and opportunities (including any training received) and how these influence the setting of the trustees' investment beliefs.	G(a)(i) G(b)(iv)
3. Identify, define and disclose the roles within the trustee board (and, where applicable, any sub-committees and/or individuals/organisations providing executive support to the trustees) that have oversight, accountability and/or manage responsibilities for climate-related issues.	G(b)(i)
<u>Additional actions/disclosures for those seeking to demonstrate leadership</u>	
4. Disclose details of commitments or involvements in wider initiatives, such as UN PRI, IIGCC, Climate Action 100+ etc.	

6. Considering climate-related risks in setting scheme investment strategy and manager selection, review and monitoring

- Trustees should consider how different investments and investment strategies could be affected by the transition to a low carbon, climate-resilient economy and under different future climate scenarios.
- Scenario analysis and modelling are helpful tools to use in considering climate risks in setting the scheme's investment strategy.
- Trustees should consider their risk appetite and time horizons in the context of their scheme and their current investment strategy, noting the need for well-defined risk management processes to ensure climate related-risks are effectively measured and managed.
- Trustees should consider how climate risks may affect different asset classes and sectors in which the scheme has invested and the investment approaches in each portfolio.
- Having determined their overall strategic asset allocation, trustees should consider the mandates set for each asset class and the method by which investments are made; and they should identify strategic actions to reduce exposure to climate-related risks, as well as options for investment in climate-related opportunities.
- Climate competence should be factored into both manager selection, review and monitoring to execute agreed mandates for each asset class and method of investment.
- Trustees should make use of the expertise of their investment consultants and advisers but should not be overly reliant on them to set the agenda. Trustees should challenge advisers and set objectives for them to factor climate-related risks into their advice.

6.1 Investment (and investment adviser) objectives

66. Trustees should set clear investment objectives for their scheme (and their advisers) and identify how and when they should be achieved. A scheme's investment strategy (and any adviser objectives to support that strategy) should support and be consistent with the trustees' objectives, taking account of the

trustees' view of climate-related risks in the circumstances of the scheme and allowing for the fact that the objectives may evolve over time.

67. Trustees should distinguish between strategies for defined benefit and defined contribution schemes. In a defined benefit scheme, this will involve considering the scheme's funding levels and employer covenant as part of an integrated risk management (IRM) approach.³⁶ In a defined contribution scheme, trustees should consider the risk/return profile appropriate to the membership and in particular the design of the default investment strategy. This will involve consideration of the needs of the scheme's members, and how these might change in the future.³⁷

6.2 Considering risk appetite

68. Considering risk appetite can help trustees determine whether their current investment strategy is appropriate. Trustees should consider how different investments and investment strategies could be affected by the transition to a low-carbon economy and/or the physical impacts of climate change under different scenarios and whether implementing an alternative strategy may be more likely to achieve the scheme's objectives. Trustees should also consider their risk appetite for capitalising on investment opportunities connected with the transition to a low-carbon economy and, if applicable, their belief that they should help to fund investments that are needed to achieve the low carbon transition.

69. Adequate risk management depends on having the right processes and the right metrics in place. However, it is worth reiterating that climate change represents a negative externality that carries potentially very high and costly market-wide risks which may be largely unpriced or mispriced. The scale and complexity of climate change and its resulting impacts requires strong and well-defined risk management processes to ensure that the risks are being measured and managed.

6.3 Use of scenario analysis

70. Trustees should:

- undertake climate scenario analysis and/or modelling, considering the scenarios to be used, how the impacts are calculated and the output of the analysis (by asset class, sector, strategic asset allocation etc.)

³⁶ See Pension Regulator's DB code of practice and IRM guidance, including guidance on assessing and monitoring employer covenant - <https://www.thepensionsregulator.gov.uk/-/media/thepensionsregulator/files/import/pdf/guidance-assessing-monitoring-employer-covenant.ashx?la=en&hash=62D096BB6BEB41B17ACA8F6CFE2EF450F669D045>

³⁷ see Chapter 4 of TPR DC Code: Designing investment arrangements (including default arrangements) - Understanding your membership - <https://www.thepensionsregulator.gov.uk/en/trustees/managing-dc-benefits/investment-guide-for-dc-pension-schemes->

- consider how they use scenario analysis (including the impact of different scenarios on different types of assets, sectors and investment approaches within each portfolio) to manage climate related risks and opportunities, including how the analysis has been interpreted and acted on and any future plans.

71. See Chapter 10 for further details on scenario analysis.

6.4 Considering climate-related risks as part of strategic asset allocation

72. Trustees should consider how climate-related risks may affect the different asset classes the pension scheme is invested in over time.

73. The proportion of different types of growth, matching and other assets held will vary by scheme (depending in a defined benefit scheme on the maturity of the scheme, its funding levels and employer covenant). In a defined contribution scheme a default fund may have a pre-determined process by which assets are transitioned from higher growth to lower volatility as a member approaches retirement age.

74. Growth assets are generally expected to be more sensitive to climate-related risks than matching assets³⁸ but trustees should consider the impact of different climate change scenarios on all asset classes (see Chapter 10). This should be factored into investment decision-making as part of a scheme's strategic asset allocation – i.e. a top-down integration instead of employing a case-by-case bottom-up approach to climate change.

75. The consideration of climate-related risks, using scenario analysis, may prompt trustees to make changes in their overall strategic allocations to different asset classes or the timeframe over which an agreed transition from growth to matching assets will occur. Trustees may also wish to consider whether certain asset classes and sectors may be expected to benefit from the low carbon transition and may wish to make positive allocations to these and/or make changes to the scheme's strategic allocation targets (e.g. set targets to increase exposure to certain types of infrastructure, real estate, private equity, etc. within a set timeframe).

76. Trustees may also wish to consider how agreed asset allocation targets and ranges may be impacted by climate change and whether it is necessary to increase ranges around existing asset class allocations to provide more leeway for significant moves towards the upper and lower boundaries during times of high volatility.

³⁸ Mercer, Investing in a Time of Climate Change, the Sequel (2019) - <https://www.mercer.com/our-thinking/wealth/climate-change-the-sequel.html>

6.5 Determining how climate-related risks are incorporated within investment mandates and portfolio construction

77. Having determined their overall strategic asset allocation, trustees must consider the mandates they intend to set for each asset class and the method by which the investments will be made.

78. Because trustees generally do not choose specific investments themselves,³⁹ they will usually delegate this power to authorised asset managers.⁴⁰ Whilst some larger pension schemes may invest through a manager who will manage a segregated portfolio of assets on behalf of the trustees, in many cases trustees will invest via pooled funds.

- **Actively managed pooled funds** - In relation to the selection of an actively managed pooled fund (or the appointment of an active manager in relation to a segregated mandate), trustees should carefully consider the investment objectives and restrictions under which the manager will make investment decisions. Trustees should identify funds and managers which adopt an investment approach which is aligned with the trustees' investment beliefs (including engagement and, where applicable, voting policies – see chapter 7). Manager capabilities should be considered carefully (see [6.6] below).
- **Passively managed pooled funds** - In relation to passively managed funds, trustees should consider the indices that might be suitable to track. To date, market-capitalisation weighted indices have been used by the majority of pension trustees (particularly in defined contribution schemes). However, these indices usually reflect business-as-usual scenarios and as allocation guidelines for sector diversification, such indices may tend to overweight high carbon sectors (e.g. oil and gas). Trustees may wish to consider the use of alternative indices if they wish to maintain a passive approach. However, in doing so care should be taken as ESG or climate tilted indices may suffer from the same flaw by maintaining overall sector allocations (going overweight for some oil and gas firms to compensate for being underweight in another).

79. In both active and passive funds, risk may be measured relative to specified benchmark indices (either as the basis of a tracking mandate in a passive fund or as a benchmark for performance for an active manager). Trustees should consider that the choice of index may limit the ability to allocate investments in line with trustee investment beliefs containing specific climate goals.

³⁹ Most day-to-day investment activities carried out on behalf of an occupational pension scheme are regulated activities: see TPR, 'Investment Guidance for Defined Benefit Pension Schemes (March 2017)', 5; see further: Financial Services and Markets Act 2000, s 22 and sch 2, para 6; Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 SI 2001 No 544, art 37.

⁴⁰ See Pensions Act 1995, s 34(2); under section 47(2) of the Pensions Act 1995, where an occupational pension scheme has assets including investments, an asset manager must be appointed.

80. Where applicable, trustees may consider a number of strategic actions to reduce identified exposure to risks. These might include:

- a shift in passive investments to low carbon benchmarks rather than tracking a market-capitalisation weighted index;
- making use of funds which take a “factor-based” approach which takes account of climate-related risks rather than tracking an index;
- replacing existing asset managers and/or investing in new priority areas using emerging taxonomies as the basis;
- engagement with asset managers and investee companies on climate-related risks (see chapter 7), collaborating with trustees of other schemes as appropriate.

81. Trustees should establish their preferred approach(es) and consider and document any changes to the trustees' strategy over time. These should be embedded into the trustees' governance, investment strategy, risk management and reporting processes.

82. Trustees may also wish to consider the potential strategic options for investing in climate-related opportunities and agree priority areas for further research (including the extent to which the trustees expect their investment consultants or asset managers to investigate and present opportunities in these areas).

6.6 Factoring climate-related risk management capabilities into the selection, review and monitoring of asset managers

83. Having decided upon the mandates they intend to set for each asset class, as well as the method of investment, trustees must consider the process and requirements for the selection, review and monitoring of managers to execute these mandates. This may begin with a review of the climate policies of existing or prospective managers. However, it also requires rigorous due diligence on how these are executed. An assessment of an asset manager's governance of climate issues and the broader integration of climate impacts into their business strategy is recommended. Appendix 2 provides a number of suggestions for trustees to help them carry out due diligence of asset managers' capabilities and approach to climate-related risk management.

84. Where schemes invest through a segregated portfolio, whether active or passive, trustees should seek to ensure that their existing managers take an approach to climate which largely aligns with the trustee's investment beliefs. Where trustees carry out a tender exercise for the appointment of a new manager trustees may wish to consider in addition the prospective managers' broader investment offering and approach and potentially the expertise, capability and track record of the manager to work with the trustees to develop and deliver solutions aligned with their investment beliefs around climate change.

85. For those schemes investing via pooled funds, whether active or passive, trustees should assess the integration capabilities of managers and approach taken for that fund/strategy; these should cover a range of approaches.

- For active (and factor-based) strategies, it is important to consider how the asset manager applies climate research, data and beliefs to enhance their fundamental analysis (or factor-based approach), and how this is reflected in and complemented by stewardship activities and voting policies (see chapter 7). Trustees should consider the extent to which the approach aligns with their investment beliefs on climate-related issues and delivers on the pension scheme's strategy. Trustees should assess manager performance against any climate-related mandates, performance benchmarks, or targets set by trustees and consider asking managers for examples of recent cases where climate factors have influenced buy/hold/sell investment decisions.
- For passive strategies, trustees will need to have considered the suitability of market-cap based solutions, against alternative index offerings. When selecting an asset manager to provide these, trustees should in all cases rigorously assess the stewardship activities and voting policies of asset managers. When selecting climate indices, they should seek to ensure that the manager's approach to climate more broadly, and in particular its stewardship activities, complement the index solutions on offer.

86. In their monitoring and review of existing managers, trustees may also consider the following strategic actions to hold managers to account on their management of climate-related issues:

- Assess quality of climate-related disclosure provided by managers, preferably against the TCFD recommendations.
- Assess quality of climate-related voting and engagement practices by managers (see chapter 7).
- Require managers to perform and report back on climate scenario analysis on their holdings (see chapter 10).
- Require managers to undergo periodic climate-related assessments (such as carbon auditing or stranded assets).

6.7 Investment consultants (and fiduciary management)

87. In practice, many trustees will rely heavily on their advisers and consultants to provide strategic advice about investment strategies, asset allocation and asset manager selection. Increasingly, trustees will rely on other consultant and adviser services, including manager research and analysis and reporting on asset manager performance. Although trustees will usually have ultimate responsibility

for making decisions on these issues, investment consultants' advice will often be highly influential.⁴¹

88. Where trustees have legal duties to consider and address climate risk, consultants will need to have regard to these when providing their advice. However, trustees retain ultimate responsibility to effectively monitor and oversee their advisers.⁴² Trustees are also required to set objectives for their investment consultants.⁴³

89. Trustees should consider setting specific objectives for their investment consultants to:

- advise so as to help trustees develop climate-related strategies (and processes to manage risk) that are aligned with trustees' investment beliefs on climate-related issues;
- address climate-related risks and opportunities material to the scheme in their investment advice, adapting their core services accordingly (including demonstrating a robust track-record that shows the adviser's capacity to assess and address the issues); and
- assess the climate-related performance (and resilience to climate related risks) of the schemes' asset managers and funds and to proactively suggest alternative approaches where these are not aligned with the trustees' investment beliefs on climate-related issues.

90. Where trustees delegate both the consultancy and implementation of investment strategy to a fiduciary manager, trustees should apply the principles relating to both asset managers and consultants as set out above. Trustees should agree with the fiduciary manager where responsibility lies in relation to each of the actions set out below, depending on the extent to which investment strategy decisions are delegated by the trustees to the fiduciary manager.

⁴¹ Financial Conduct Authority. Asset Management Market study: Interim Report (November 2016), 140–170 - <https://www.fca.org.uk/publication/market-studies/ms15-2-2-interim-report.pdf>

⁴² TPR, 21st Century Trusteeship - <https://www.thepensionsregulator.gov.uk/en/trustees/21st-century-trusteeship/2,-d,-clear-roles-and-responsibilities> See also – Managing DC benefits, Scheme management skills - <https://www.thepensionsregulator.gov.uk/en/trustees/managing-dc-benefits/scheme-management-skills-guide-for-dc-pensions/#f5c80ed475614021af1eb07874c56c1d>

⁴³ The Investment Consultancy and Fiduciary Management Market Investigation Order 2019, Article 12 - https://assets.publishing.service.gov.uk/media/5cfdfa86e5274a090f9eef8e/Order_investment_consultants.pdf

Investment strategy Suggested trustee actions (and recommended disclosures)	TCFD
Overall strategy	
1. Consider, document and disclose whether (and if so, the processes and frequency by which) the trustees (and/or relevant sub-committee) consider climate issues when setting the scheme's investment strategy.	G(a)(ii)
2. Consider, document and disclose how the trustee board (or relevant sub-committee) will identify climate-related risks/opportunities. Trustees may wish to consider: <ul style="list-style-type: none"> - what information is needed to evaluate climate-related risks and opportunities, and where can it be sourced; - which risks/opportunities could be material (including existing and emerging regulatory requirements related to climate change); - what process will the trustees adopt for determining size/scope of risks/opportunities at total fund/strategy level, and individual asset class-level. Risks and opportunities should be considered in absolute terms and in relation to the risk appetite of the scheme; - how the trustees have assessed the materiality – the likelihood and impact – of climate-related risks (and opportunities) - e.g. by sector and/or geography, as appropriate; and - the role of the trustee's investment consultants in bringing climate-related risks/opportunities to the trustees' attention (and their capacity and expertise to do so). 	S(a)(iii) R(a)(i) R(a)(ii) R(a)(iii)
3. Identify, document and disclose the extent (consistent with the trustees' investment beliefs) to which and how the trustees intend to factor climate-related risks and opportunities into relevant investment strategies - both at total fund/strategy level, and individual asset class-level.	S(b)(i) S(b)(ii) S(b)(iv)
4. Identify, document and disclose what the trustees consider to be the relevant short-, medium-, and long-term horizons, taking into account: <ul style="list-style-type: none"> - in a defined benefit scheme, the likely time horizon over which members' benefits will be paid; and - in a defined contribution scheme the likely time horizon over which members' monies will be invested to and through retirement. 	S(a)(i)

<p>5. Identify, document and disclose the climate-related issues for each time horizon (short, medium, and long-term) that could have a material financial impact - whether transition or physical risk. Examples of risks to cover may include: increased pricing of greenhouse gas emissions; substitution of existing products and services with lower emission alternatives; successful/unsuccessful investments in new technology; moves to more efficient buildings and infrastructure; litigation risk; extreme weather risk.</p>	S(a)(ii)
<p>6. Consider, document and disclose the resilience of the scheme's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario and how this informs the design of strategies.</p>	S(c)(i)
<p>7. Consider, document and disclose how the trustees' processes for identifying, assessing, and managing climate-related risks are integrated into the scheme's risk register and/or integrated risk management approach. Trustees may wish to consider:</p> <ul style="list-style-type: none"> - their processes for managing climate-related risks, including how they make decisions to mitigate, accept, or control those risks; - their processes for prioritising climate-related risks, including how materiality determinations are made; and - the role of the trustee's investment consultants in advising on the integration of climate-related issues within an integrated risk management approach. 	R(b)(i) R(b)(ii) R(c)(i)
<p>8. Identify, document and disclose the extent (if at all) to which climate-related issues are included in the trustees' investment consultant's strategic objectives.⁴⁴ Trustees may wish to consider (but need not disclose) any similar requirements incorporated into consultants' investment service agreements.</p>	G(a)(ii)
Asset allocation and defining asset manager / pooled fund mandates	
<p>9. Identify, document and disclose how the trustees consider that climate change may impact the scheme's growth, matching and other portfolios (including the default fund in a DC scheme), taking into account the short-, medium-, and long-term horizons the trustees have identified as relevant. This should include identifying and taking account of areas where the scheme's (or default fund's) asset allocation ranges and portfolio structure are expected to evolve in the future.</p>	S(a)(ii)
<p>10. Identify, document and disclose the extent (if at all) to which climate-related risks are embedded/included in strategic asset allocation decisions (and detail any changes resulting from scenario analysis into strategic asset allocation decisions).</p>	S(b)(i) S(b)(iii) S(b)(iv)

⁴⁴ Note that trustees are obliged to document their investment consultant's strategic objectives under Article 12 of the Investment Consultancy and Fiduciary Management Market Investigation Order 2019.

<p>11. Consider, document and disclose how scenario analysis is used as a relevant factor in informing asset allocation and decisions to invest in specific asset classes.</p>	<p>S(b)(iii) S(c)(ii)</p>
<p>12. Consider, document and disclose how the scheme's growth, matching and other portfolios are positioned in relation to the transition to a lower-carbon economy. Trustees may wish to consider:</p> <ul style="list-style-type: none"> - within different asset classes, the scheme's exposure to those sectors that are particularly sensitive to transition risk (energy, utilities, materials); and - in relation to passive funds, the extent to which low-carbon transition risks and opportunities are part of the index and whether the trustees have considered any reallocation to alternative index funds or factor-based funds with climate-related weightings. 	<p>S(b)(i) S(c)(i) R(b)(iii)</p>
<p>13. Consider, document and disclose how climate-related risks may impact funds with higher exposure to economic sectors that are concerned with physical assets or natural resources, such as real estate, infrastructure, timber, agriculture and tourism (being the most vulnerable to physical risks of climate change). Trustees may wish to consider:</p> <ul style="list-style-type: none"> - TCFD's focus sectors (i.e. Energy; Materials and Buildings; Transportation; and Agriculture, Food, and Forest Products); - regional and sectoral mix to identify and capture the areas where the greatest climate transition is expected to occur; and - exposure to and management of stranded assets. 	<p>S(b)(i)</p>
<p>Asset manager selection, review and monitoring</p>	
<p>14. Identify, document and disclose how the trustees' process for the selection, review and monitoring of the scheme's asset managers takes account of climate change issues. Trustees may wish to consider:</p> <ul style="list-style-type: none"> - the role of the trustee's investment consultants in rating asset managers, how such rating process takes climate change issues into account, and how such rating process is understood and reviewed by the trustees; - how the trustees ensure that the weighting attributed to climate change issues within manager selection, review and monitoring is appropriate to the trustees' investment beliefs and the scheme's investment strategy in relation to climate issues; - how frequently the selection, review and monitoring process is reviewed in relation to climate change issues; and - if selection and monitoring of asset managers is delegated to a fiduciary manager, what oversight processes are in place on their integration of climate considerations. 	<p>G(b)(i)</p>

<p>15. Identify, document and disclose how the trustees evaluate the alignment of their asset managers' investment strategy (or the investment objectives of any pooled funds) with the trustees' climate-related investment beliefs and the scheme's investment strategy and objectives in relation to climate issues. Trustees may wish to consider:</p> <ul style="list-style-type: none"> - the role of the trustee's investment consultants in advising the trustees on the alignment of the managers' investment strategy; - how (if at all) the manager is incentivised to align its investment strategy; and - how the method (and time horizon) of the trustees' evaluation of the asset manager's (or pooled fund's) performance and the remuneration of the manager are in line with the trustees' climate-related investment beliefs and support the scheme's investment strategy and objectives in relation to climate issues. 	
Additional actions/disclosures for those seeking to demonstrate leadership	
<p>16. Disclose details of any carbon-footprinting undertaken in respect of the scheme and how this is used to assess climate-related risks and opportunities in relation to the scheme's investment strategy.</p>	M(b)(iv)
<p>17. Disclose details of any specific decarbonisation target adopted by the scheme, such as alignment with specific climate objectives e.g. below 2°C / alignment with the Paris Agreement / net zero by an earlier date (including methodology used) and how the trustee board (or relevant sub-committee) monitors and oversees progress against this. Trustees may wish to consider whether such targets or objectives:</p> <ul style="list-style-type: none"> - should aspire to lower greenhouse gas emissions by exclusion of sectors or companies from a scheme's portfolio over time as opposed to engagement with those sectors or companies leading to a reduction of greenhouse gas emissions by such sectors or companies; - will apply across all assets (or for example be limited to listed equities); - are absolute or intensity based; - are based on real-life vs portfolio outcomes (for example, would a scheme investment in, say, EU carbon credits, or wind farms, be allowed to reduce the associated emissions of a portfolio elsewhere?) 	G(a)(iii) R(b)(iii) M(c)
<p>18. Consider steps taken to reduce the pension scheme's own operational impact e.g. use of renewable energy sources, business travel and use of off-sets and adaptation measures to reduce climate impact.</p>	

7. The trustees' approach to stewardship on climate issues

- Stewardship sits alongside the integration of long-term factors into investment decision-making, governance and processes.
- It is therefore important that trustees consider how they fulfil their stewardship role (including both engagement and voting) on climate change issues to create “long-term value for...beneficiaries” and disclose their activities in this respect.

7.1 Why stewardship forms a key part of an integrated approach to climate-risk

91. The UK Stewardship Code defines stewardship as “the responsible allocation, management and oversight of capital to create long-term value for clients and beneficiaries leading to sustainable benefits for the economy, the environment and society.”

92. There is a growing body of evidence⁴⁵ which demonstrates the benefits of active ownership, or good stewardship, to corporate performance. Engagement activity with investee companies (including through appointed managers) can help to encourage better practices and corporate behaviours related to climate-related risks as well as improving disclosures by those companies to enable better assessment of climate-related risks by asset owners. It should therefore form a key part of the integration of climate issues into trustee investment processes.

93. Although there is only one specific TCFD recommended disclosure on stewardship or engagement, it is difficult for trustees to have a meaningful and effective governance and decision-making framework – for instance regarding investment beliefs, or use of metrics, or in disclosing their approach on climate change – without consideration of how they fulfil their stewardship role.

⁴⁵ This includes *Active Ownership* (Dimson, Karakas and Li, 2012) or *Does Corporate Social Responsibility Lead to Superior Financial Performance? A Regression Discontinuity Approach* (Flammer, 2013).

7.2 Principles for effective climate stewardship

94. What good stewardship looks like will vary for each trustee board, depending on the scheme's resources and the trustees' investment beliefs. However, in all cases trustees should be clear on how stewardship fits within the scheme's investment strategy and how it helps meet the trustees' climate-related investment objectives.⁴⁶

Manager delegated approach

95. In many cases, trustees will delegate stewardship activities to the scheme's asset managers. Where this is the case, trustees should:

- Familiarise themselves with their asset manager's stewardship policies in relation to climate-related issues (seeking to influence them where appropriate). This should include talking to their advisers and asset managers about how climate-related risks and opportunities are currently built into their engagement and voting policies and, where applicable, how they sit alongside measures taken to reflect climate-related risks within investment portfolios. Trustees should have a clear understanding of what 'success' by their asset managers on climate issues looks like.
- Ensure that asset managers' climate approaches are in line with the trustees' climate-related investment beliefs and support the scheme's investment strategy and objectives in relation to climate issues.
- Hold their asset managers to account in relation to their engagement activities and voting record on climate issues. Agreeing a schedule for monitoring and reviewing outsourced stewardship activities would be good practice and will assist trustees comply with their own requirements to produce an annual statement in the scheme's report and accounts setting out how the trustees' voting and engagement policies have been implemented during each scheme year (see 3.2(C) above).
- When appointing new asset managers, using due diligence and the asset manager appointment process to gain a clear understanding of how the prospective manager considers and integrates climate factors in their engagement and voting behaviour (including, the asset manager's approach to securities lending).
- Where asset managers outsource activities on climate stewardship, explicitly setting out expectations for such outsourced activities on climate stewardship and approaches in legal documents. This could include in documents such as the Investment Management Agreement (IMA) or side letters to pooled fund documentation.

⁴⁶ Further details on building a stewardship, engagement and voting policy across issues including on climate change can be found in the PLSA's *Stewardship Guide and Voting Guidelines 2020* - <https://www.plsa.co.uk/Policy-and-Research/Document-library/PLSA-Stewardship-Guide-and-Voting-Guidelines-2020>

Scheme own strategy

96. Some trustees may have strategies to carry out their own engagement and/or voting. In this case, trustees should articulate a clear process and policy for voting on climate issues. This should identify what issues will be taken into account when deciding how to cast their vote and also set out their approach to exercising voting rights, having a clear understanding of what ‘success’ on climate issues looks like. Key issues to consider could include:

- How to make systematic use of all voting powers at trustees’ disposal to support the highest standards of climate governance and approach at investee companies.
- Under what circumstances the trustees will seek to support climate-related resolutions. Key issues for consideration would include: whether the resolution conflicts with other climate resolutions; whether it is supported by management; whether the resolution is binding or non-binding; whether the solution sought is appropriate and consistent with the business’ long-term success.
- Where scheme investments are held in pooled arrangements, the extent to which the scheme’s asset manager policies enable the casting of client votes.

97. In addition to the above, trustees might also like to consider the following as part of their overall stewardship approach:

- **Joining collective or collaborative engagement efforts.** The 2012 Kay Review noted that greater collective engagement could address concerns about fragmented and disparate ownership of companies. Collaborative engagement may be particularly appropriate for those trustees with fewer resources for specific engagement activities and who can maximise their influence by joining their voice with those of others.
- **Influencing the public policy debate on climate.** Investor stewardship takes place within a policy and regulatory framework which is shaped by various forces including governments, political parties, membership associations, campaign groups and public opinion. If trustees feel that the legislative framework does not sufficiently support them in acting as good stewards of their assets, they should seek to influence policy and regulatory initiatives.
- **Aim to follow and engage with the UK Stewardship Code**, including becoming a signatory where possible.
- **Agree a policy and approach for communication of stewardship activities and outcomes to stakeholders.** As well as reporting duties under statutory requirements around engagement (see [3.2] above), stewardship should also be communicated with beneficiaries. Trustees could consider a standalone stewardship or responsible investment report, additional information on members’ annual benefit statements or, for defined contribution schemes, content in the Chair’s Statement.

7.3 Holding investee companies to account on TCFD

98. The TCFD recommendations apply not just to asset owners, but to the investee companies themselves⁴⁷. Trustees should be working with their advisers and managers to ensure a joined-up approach on TCFD which extends through to these companies. This should include engagement and, where necessary, applying a voting sanction to company boards which are not effectively monitoring, assessing and providing oversight of the company's approach to managing the risks and opportunities from climate change.
99. Some of the largest companies are already reporting using TCFD. This can either be done in a separate Sustainability Report or integrated throughout the Annual Report – which is the approach many investors prefer. Although trustees should make allowances for smaller firms in their use of specific third-party frameworks like TCFD, there should be evidence that all companies are at least broadly considering their approach to climate risk in terms of governance, strategy and risk management – and which are also making use of appropriate metrics and scenario analysis.
100. Trustees should look for the following as signs of good corporate behaviour:
- **A discussion of climate change in terms of strategic, financial and operational factors.** The potential impact of different scenarios – including reactions from policymakers and regulators – on value creation in the long-term should be clearly discussed. There should also be a clear link to risk management at the executive level and risk oversight at the board level. The impact of climate risk and opportunities on the firm's strategy over the short-, medium- and long-term should be clearly outlined.
 - **Clear climate-related governance and oversight structures and processes.** This includes climate change expertise at board level, identification of which Director is accountable for climate issues and management's role in assessing and managing climate-related risks and opportunities. Every Director should demonstrate an understanding and awareness of the potential range of impacts which climate change may have on the company⁴⁸.
 - **A proactive approach both to identifying and managing climate risks (and opportunities) and providing sufficient disclosures on climate change.** Although at this stage this does not need to include reporting using the TCFD framework, there should already be evidence that companies are

⁴⁷ Listed companies will be required to report against the TCFD recommendations by 2022 see: HM Government: Green Finance Strategy – Transforming Finance for a Greener Future (July 2019) -

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf

See also FCA consultation CP20/3: Proposals to enhance climate-related disclosures by listed issuers and clarification of existing disclosure obligations: <https://www.fca.org.uk/publications/consultation-papers/cp20-3-proposals-enhance-climate-related-disclosures-listed-issuers-and-clarification-existing>

⁴⁸ We acknowledge that this understanding may change owing to developments in the available data as well as technological, regulatory and scientific developments.

considering the issue of climate change across the high-level TCFD areas of governance, risk management, strategy, metrics and targets, and scenario analysis.

- **Active consideration and discussion in reporting of both the expected physical impacts of climate change and transition impacts.** In terms of physical impacts of climate change, the resilience of assets and supply chains in the face of, for example, changing weather patterns and rising sea levels should be considered as relevant. Companies also need to demonstrate consideration of the potential impact of changes in public policy and regulation around the transition to a low carbon economy.
- **Clear reference in the Annual Report and Accounts to, and use of, credible industry climate reporting metrics.** This should include reference to the Task Force on Climate-Related Financial Disclosures, SASB (Sustainability Accounting Standards Board) CDSB (Climate Disclosures Standards Board), or other established third party frameworks. Companies should provide explanations as to the rationale for their choice of framework and the extent to which, if at all, relevant metrics have been “blended” with others. *Please note:* smaller and medium sized companies should be allowed some discretion and flexibility regarding their choice of framework and timescales.
- **Reference in disclosures the Paris Agreement and mention Net Zero.** Companies should disclose whether or not they have assessed whether their business model is compatible with global commitments to mitigate temperature increases and, where they do not feel this is currently the case, have outlined a process – complete with relevant timescales – under which they hope to achieve compatibility.
This should include a discussion of the metrics which the company has chosen to assess climate-related risks and opportunities in line with its strategy and risk management. These metrics could include Scope 1, 2 or (where relevant) Scope 3 greenhouse gas emissions.
- **Financial disclosures include transparency on the underlying assumptions used to calculate balance sheet valuations and earnings.** Many key valuation and profit measures disclosed by companies depend on assumptions about future returns. Investors may wish to challenge the calculations and/or substitute alternative assumptions in their own financial analysis should there be concern that these may rely on the Paris Agreement not being delivered in practice. In order to be open to such discussion, companies should be transparent on the assumptions underlying their calculations.
- **A company’s political donations and membership of trade associations are aligned with their stance on climate change.** Investors have become increasingly concerned about corporate support for organisations and individuals whose lobbying activities and objectives are considered to frustrate climate change mitigation. Such support may take the form of political donations, trade association membership, or the establishment of charitable or

educational trusts that undertake lobbying against progressive climate legislation⁴⁹.

101. Asset owners should describe, where appropriate, engagement activity with investee companies (including through appointed managers) to encourage better disclosure and practices related to climate-related risks to improve data availability and asset owners' ability to assess climate-related risks.

Stewardship	
Suggested trustee actions (and recommended disclosures)	TCFD
<p>1. Consider, document and disclose the trustees' policy⁵⁰ setting out the processes by which the trustees engage with investee companies (including but not limited to issuers of debt or equity, investment managers or another holder of debt or equity) on climate-related issues. Trustees should consider:</p> <ul style="list-style-type: none"> - the methods by which, and the circumstances under which, the trustees would monitor and engage with investee companies on climate-related issues; - their approach to exercising rights (including voting rights) attaching to the scheme's investments in relation to climate-related issues; - the extent to which responsibilities for stewardship are delegated by the trustees to third parties or sub-committees and/or individuals/organisations providing executive support to the trustees; - where trustees delegate stewardship activities to the scheme's asset managers, the processes by which the trustees familiarise themselves (and seek to influence) the manager's stewardship policies in relation to climate-related issues and how the trustees evaluate the alignment of the managers' stewardship policies with the trustees' climate-related investment beliefs and the scheme's investment strategy and objectives in relation to climate issues. 	R(a)(iv)

⁴⁹ We encourage investors to consider the recommendations from the Institutional Investors Group on Climate Change (IIGCC) on *European Investor Expectations on Corporate Lobbying on Climate Change* (2018) which outlines what positive company engagement with public policymakers on the transition to an orderly transition to a low carbon economy might look like.

⁵⁰ This can be set out in the trustees' policy on stewardship required to be included in their Statement of Investment Principles, see s.2(3)(c) of the Occupational Pension Schemes (Investment) Regulations 2005

<p>2. Disclose how, and the extent to which the trustees' engagement policy on climate-related issues has been followed during the year.⁵¹ Trustees should consider:</p> <ul style="list-style-type: none"> - outcomes of any collaborative engagement/other engagement initiatives in which the trustees have taken part; - the voting behaviour by, and on behalf of, the trustees (including the most significant votes cast by the trustees or on their behalf) during the year; - use of the services of a proxy voter during the year. 	
<u>Additional actions/disclosures for those seeking to demonstrate leadership</u>	
<p>3. Disclose the Stewardship Code signatory status of the scheme.</p>	

⁵¹ This can be set out in the trustees' implementation statement prepared under regulation 12 of the Occupational and Personal Pension Schemes (Disclosure of Information) Regulations 2013 in accordance with paragraphs 30(ca) or 30(f) (as applicable) of Schedule 3 of those regulations.

8. Additional points for defined benefit schemes

- Trustees need to take an integrated risk management (IRM) approach to DB scheme funding and investment, looking at how climate-related risks around the employer covenant, funding, and investment strategy may be linked and inter-dependent.
- Scenario testing can help trustees and their covenant advisers assess risks to investments, funding and covenant arising from climate change.

8.1 Assessing the impact of climate-related risks on sponsor covenant

102. For DB schemes, the sponsor covenant is the extent of the employer's legal obligation and financial ability to support the scheme now and in the future. TPR has previously set out in guidance its view of how the sponsor covenant should be assessed.⁵²

103. Trustees need to consider risks from climate change on the sponsoring employer when assessing the strength of the current covenant.⁵³ Trustees should take independent external advice where they lack the objectivity or expertise required to perform an appropriate assessment.

104. All sponsoring employers will be exposed to climate-related risks and opportunities to some extent, although their nature and magnitude will vary considerably. Trustees of schemes with direct exposure to fossil fuels companies should be aware that their scheme will likely have above-average exposure to climate-related risks through the scheme's sponsor covenant. However, climate-related risks may be more difficult to identify where they are longer-term in nature or primarily arise through indirect routes such as supply chain exposure.

105. There are various routes through which climate-related risks can affect businesses, with both direct and indirect effects on their financial strength. For example:⁵⁴

⁵² <https://www.thepensionsregulator.gov.uk/en/document-library/regulatory-guidance/assessing-and-monitoring-the-employer-covenant>

⁵³ See press release from the Employer Covenant Practitioners Association ("ECPA") (July 2019): "it's vital that DB covenant assessments consider potential implications of climate change on sponsors' businesses" <https://ecpa.org.uk/docs/20190717-news-climate.pdf>

⁵⁴ Examples taken from Institute and Faculty of Actuaries, Resource and Environment Issues for Pensions Actuaries: Supplementary Information on Resource and Environment Issues and their Implications for Sponsor Covenant Assessments - <https://www.actuaries.org.uk/system/files/field/document/Covenant%20report%20-%20July%202019%20updates.pdf>

- Cost and availability of inputs – due to interaction of supply and demand, possibly affected (positively or negatively) by government intervention.
- Valuation of company assets – e.g. fossil fuel reserves (stranded assets), high carbon infrastructure, buildings on flood plains.
- Legislative and regulatory change – mechanisms may be market-based (e.g. carbon taxes, emission trading schemes, renewable subsidies) or non-market-based (e.g. vehicle emission limits, bans on certain chemicals, water quality standards).
- Technological change and product evolution – e.g. rapid advances in renewable energy technology is reducing costs and threatening the cost-competitiveness of fossil fuels.
- Changes in customer demand and social norms – prompted by environmental concerns, either voluntarily, or in response to, or anticipation of, policy changes.
- Reputational damage – caused by failing to meet public expectations and/or legislative requirements.
- Shareholder sentiment – businesses that are seen as environmentally risky or inconsistent with a low carbon future may become unpopular with investors (e.g. high profile campaigns are encouraging divestment from fossil fuels).
- Business disruption – e.g. caused by damage to business premises, infrastructure or the transport network, affecting the business directly or its suppliers and customers.
- Fines and litigation risk – climate change is a new source of litigation risk as people affected by climate change, or organisations campaigning on their behalf, seek compensation.

106. As schemes rely on sponsor contributions for many years into the future, trustee assessments of their sponsor covenant should be forward-looking, taking account of the impact of potential medium and long-term climate scenarios on the employer business (considering both transition and physical risks) and the market in which it operates.

107. Trustees should consider their sponsor's business resilience in the face of future uncertainties. This might involve exploring the employer's risk management processes, including how it identifies emerging risks and factors them into long-term business planning. Where applicable, trustees may wish to consider the appropriateness of the sponsor providing information to the trustees (or their professional covenant assessors) in line with the TCFD recommended disclosures.

108. Emphasis should also be placed on qualitative information, including information about the employer values and culture in relation to climate issues and risk management.

109. Trustees may wish to consider raising the following questions with their sponsoring employer⁵⁵:

- What are the main climate-related risks faced by the business over the short, medium and long-term?
- How does the company identify, assess and mitigate these risks?
- What climate-related risks might affect business viability over the term of the scheme's recovery plan and long-term funding target?
- How does the company seek to achieve a resilient business model which is robust to a wide range of potential climate scenarios?

8.2 Taking account of climate issues in DB funding

110. As for any area of risk, the funding implications of climate issues on DB schemes are affected by the covenant and investment implications and vice versa. For example, a scheme that is actively managing climate-related risks to its investments and has a sponsor with relatively low exposure to climate-related risks, may conclude that no adjustments are needed to the current financial assumptions.

111. Conversely, scheme actuaries may want to suggest a more prudent funding approach in schemes where mitigation of climate-related risks is not explicitly addressed in the trustees' investment strategy or where climate-related risks are a major source of covenant risk.

112. More broadly, scheme liabilities may be affected through wider financial and mortality assumptions:

- Actuaries use market yields when setting financial assumptions, and compare the resulting value of liabilities with a market value of assets. Where markets are not pricing climate-related risks correctly (or are underestimating the downside risks) this may have a knock-on effect on financial assumptions.
- Current mortality rate assumptions are affected by environmental factors such as cold winters and poor air quality, and these effects are reflected in the data used to construct base tables and initial rates of mortality improvement. Assumptions may, however, be impacted by climate-related issues. This may go wider than the direct effects of rising temperatures and more extreme weather events. Other factors may have an effect such as increasing energy prices and a resource-constrained economy. Conversely efforts to reduce air

⁵⁵ Taken from Institute and Faculty of Actuaries, Resource and Environment Issues: A Practical Guide for Defined Benefit Pensions Actuaries (April 2017) - <https://www.actuaries.org.uk/practice-areas/resource-and-environment/resource-and-environment-practice-area-practical-guides>

pollution and greenhouse gas emissions may improve health.⁵⁶ All of these effects are difficult to quantify, however and impacts may vary by age and location.

113. Given the uncertainty surrounding these effects, trustees may wish to consider asking their actuaries to illustrate a range of possible financial assumptions and mortality improvements in their advice, taking into account different potential climate scenarios.⁵⁷

114. Buy-out funding targets for schemes may also be affected as insurers start to price in climate impacts, although anecdotal evidence suggests that there has been little, if any, impact on annuity pricing to date.

DB covenant and funding	
Suggested trustee actions (and recommended disclosures)	TCFD
<p>1. Identify, document (and disclose where applicable⁵⁸) the extent to which (and how) the trustees factor climate-related risks and opportunities into their assessment of the sponsor covenant. Trustees may wish to consider:</p> <ul style="list-style-type: none"> - the trustees' (or their covenant assessor's) processes for determining which climate-related risks and opportunities could have a material impact on the sponsor's covenant including how materiality determinations are made; - what the trustees (or their covenant assessors) consider to be the relevant short-, medium-, and long-term horizons and the climate-related issues for each time horizon that could have a material impact on the sponsor - whether transition or physical risk; and - the resilience of the scheme's sponsor, taking into consideration different climate-related scenarios, including a 2°C or lower scenario and how this informs the design of strategies. 	<p>G(a)(ii) S(a) S(c)(i) R(a)(iii) R(b)(ii) R(c)(i)</p>
<p>2. Identify, document and disclose how climate-related risks are included in the actuary's assessment of the scheme's liabilities. Trustees may wish to consider the extent to which:</p> <ul style="list-style-type: none"> - changes to longevity / mortality assumptions and asset performance assumptions are made to take account of climate issues; - margins for prudence are included to allow for mitigation of climate-related risks not explicitly addressed in the trustees' investment strategy or climate-related risks in relation to the sponsor covenant; and - a different approach is adopted in assessing technical provisions and long-term funding targets. 	<p>S(b)(ii) R(b)(i)</p>

⁵⁶ For further examples see Resource and Environment Issues for Pension Actuaries: Implications for Setting Mortality Assumptions (October 2017) -

<https://www.actuaries.org.uk/system/files/field/document/Mortality%20report%20-%20July%202019%20updates%20%28final%29.pdf>

⁵⁷ An IFoA risk alert, dated May 2017, states that "Actuaries should ensure that they understand, and are clear in communicating, the extent to which they have taken account of climate-related risks in any relevant decisions, calculations or advice" - <https://www.actuaries.org.uk/documents/risk-alert-climate-related-risks>

⁵⁸ It is recognised that some information which trustees rely upon in forming a view of the scheme sponsor's covenant may be confidential and or market-sensitive and that accordingly, disclosures may be limited to a description of the trustee processes rather than providing substantive information in relation to the sponsor.

9. Method of reporting and member communication

- Trustees should seek to inform members of actions taken to manage climate-related risks and opportunities across their portfolios.

9.1 Disclosure

115. Preparing for public reporting in line with the TCFD recommendations may help trustees meet other existing and forthcoming regulatory disclosure requirements around climate change.

116. Trustees can consider the following approaches to publishing TCFD-aligned disclosure:

- Publishing a standalone TCFD report.
- Incorporating into the scheme’s annual report and accounts (as recommended by the TCFD).
- Incorporating into the Chair’s statement or implementation statement (for defined contribution schemes required to produce one).
- Incorporating TCFD-aligned disclosure into some other form of member communication (such as a member newsletter or responsible investment report).

117. Regardless of which of the above approaches are used for disclosure, the TCFD recommends that climate-related financial disclosures should be subject to appropriate governance processes “that are the same or substantially similar to those used for financial reporting.”⁵⁹

118. The TCFD offers further guidance on how to make the 11 recommended disclosures noting that “When used by organisations in preparing their climate-related financial disclosures, these principles can help achieve high-quality and decision-useful disclosures that enable users to understand the impact of climate change on their organisations”. Trustees should consider the following principles when deciding upon and reviewing their climate-related financial disclosures:

⁵⁹ TCFD Final Report. Recommendations of the Task Force on Climate-related Financial Disclosures (June 2017), p.18. - <https://www.fsb-tcf.org/publications/>

Principles for Effective Disclosures⁶⁰

1	Disclosures should present relevant information specific to the potential impact of climate-related risks and opportunities on the scheme avoiding generic or boilerplate disclosures that do not add value to members’ understanding of issues.
2	Disclosures should be specific and sufficiently complete to provide a thorough overview of the scheme’s exposure to potential climate-related impacts and the trustees’ governance, strategy and processes for managing climate-related risks and opportunities.
3	Disclosures should be clear and understandable showing an appropriate balance between qualitative and quantitative information.
4	Disclosures should be consistent over time to enable scheme members to understand the development and/or evolution of the impact of climate-related issues on the scheme.
5	Disclosures should ideally be comparable with other pension funds of a similar size and type.
6	Disclosures should be reliable, verifiable and objective.
7	Disclosures should be provided on a timely basis. The TCFD recommends annual disclosures for organisations. However, pension funds starting out may consider triennial disclosures.

9.2 Member communication

119. Communicating clearly with members on how climate-related risks and opportunities are being managed can also help build trust and public confidence, especially as members’ interest in climate change continues to escalate. The UK Stewardship Code also requires signatories to communicate the activities and outcomes of their stewardship and investment (see chapter 7).

120. In addition to public reporting, trustees can consider including member communication on climate change in the following:

- Regular newsletters.
- Online content including social media.

⁶⁰ Adapted from the TCFD Final Report, Annex: Implementing the Recommendations of the TCFD (June 2017) Part F - <https://www.fsb-tcf.org/publications/final-implementing-tcf-recommendations/>

- Member events and representative programs.

121. Trustees interested in improving their member communications on important topics like climate change are encouraged to read ShareAction’s report, “Pensions for the Next Generation: Communicating What Matters”.⁶¹

Review process, monitoring and reporting	
Suggested trustee actions (and recommended disclosures)	TCFD
1. Consider the communication routes used to provide assurance to beneficiaries and other stakeholders on climate-related activity and whether disclosure to members adheres to the 11 TCFD recommended disclosures and underpinning principles for effective disclosure.	n/a
<u>Additional actions/disclosures for those seeking to demonstrate leadership</u>	
2. Provide an overview of the climate related queries or communications from beneficiaries and other stakeholders	n/a

⁶¹ ShareAction, Pensions for the Next Generation: Communicating What Matters (March 2018) - <https://shareaction.org/resources/pensions-for-the-next-generation-communicating-what-matters/>

PART III -Technical supplements

10. Scenario analysis - Resilience of the pension scheme to different climate scenarios

- Scenario analysis is a key tool for testing the strategic resilience of the pension scheme to different future plausible climate states.
- Carrying out scenario analysis is a crucial step in trustees meeting their legal duty to manage climate-related risks.
- The TCFD guidance for asset owners, including pension scheme trustees, requires them to consider how resilient the scheme's strategies are to a range of climate related scenarios, which illuminate the possible impacts of both transition and physical risks and opportunities. These should include transition to a lower-carbon economy consistent with a high probability of a temperature rise of less than or equal to 2°C.⁶²
- A simple approach is for trustees to ask their asset managers or consultants for details of any climate scenario analysis they have carried out and actions taken as a result.
- There are also free tools that trustees can use, such as [PACTA](#), the [Transition Pathway Initiative](#) and the [PRA's stress test](#). Alternatively, a consultant or a third-party provider can be asked to conduct the scenario analysis.
- It may find be easiest to start with qualitative approaches that describe how climate-related impacts could crystallise over time. This should, however, be followed up with quantitative analysis as soon as practicable.
- In all cases, it is important to specify the scenarios used, methodology and related assumptions, as well as to state the conclusion regarding the strategic resilience of the scheme under different plausible scenarios.
- Qualitative analysis might initially cover the impacts on limited asset classes, such as equities and corporate bonds. Over time, it should be extended to the rest of the scheme's assets and (for DB schemes) the impact on the covenant and funding position.

⁶² The work of the TCFD, and the publication of its recommendations in July 2017, took place before the publication of the Intergovernmental Panel on Climate Change (IPCC)'s special report on Global Warming of 1.5°C in 2018. Since that IPCC report, the focus of the international community has increasingly been on limiting warming to 1.5°C, including in the UK Government's commitment to reach net zero emissions by 2050, and pension schemes would be well advised to keep this in mind when carrying out scenario analysis.

10.1 Introduction to scenario analysis

122. Scenario analysis is a well-established tool for understanding possible alternative futures, “challenging conventional wisdom about the future”⁶³, and developing strategic plans that are more flexible or robust to a range of plausible future states. In a world of uncertainty, scenarios are intended to explore alternatives that may significantly alter “business-as-usual” assumptions.
123. For pension schemes, scenario analysis is the process of estimating the expected value of a portfolio after a period of time in different scenarios, and identifying mitigating actions to minimise the risks, or positive actions to exploit the opportunities they offer. It might be carried out for a range of interest rates, exchange rates, or broader macroeconomic scenarios.
124. Climate change is another financially material risk to pension scheme portfolios and their liabilities. Therefore, the TCFD framework requires asset owners, including pension schemes, to assess their resilience to climate-related risks and opportunities, including:
- asset-side changes such as potential earnings impairment or enhancement of companies in which they invest and to whom they lend – for example, as a result of transition policies, demand changes, physical impacts, and other factors such as litigation risks.
 - (in the case of DB schemes) liability-side changes such as inflation, interest rates, longevity and the strength of the sponsoring employer covenant.
125. Scenario analysis is relevant for all pension schemes, though how they use it will vary with the scheme’s time horizon.
126. For example, even closed DB schemes that are aiming to wind up in the next decade are vulnerable to “transition risk” which could affect the value of assets such as corporate debt. The climate-related risks to bulk annuities should also be a consideration for trustees, both when setting funding targets (due to potential impacts on annuity pricing) and when selecting a provider.
127. In contrast, current members of open DC schemes – the vast majority of whom will be invested in the default - may well be exposed to investment risk and climate-related risks well into the 2060s and beyond, meaning that they will be retiring into a world of very different asset valuations. Disruption to those asset values may be rapid and unpredictable, so timing the market is unlikely to be an option.

⁶³ Quote from page 2 of the TCFD technical supplement on “The use of scenario analysis in disclosure of climate-related risks and opportunities” (2017) <https://www.fsb-tcf.org/wp-content/uploads/2017/06/FINAL-TCFD-Technical-Supplement-062917.pdf>

10.2 Minimum legal requirements

128. As set out in Chapter 3, trustees are already subject to a number of legal duties where climate-related risks are concerned. Schemes must include in their SIPs their policies in relation to risks (including the ways in which risks are to be measured and managed) and their policies on “financially material considerations” (including how those considerations are taken into account in the selection, retention and realisation of investments)⁶⁴. Most pension schemes are also required⁶⁵ to carry out an own-risk assessment including risks relating to climate change, the use of resources and the environment, and risks relating to the depreciation of assets as a result of regulatory change.
129. Because of the nature of the risks posed by climate change, past performance of the markets cannot provide meaningful information about future impacts. Forward looking scenario analysis is therefore a key tool for assessing the risks and opportunities that climate change presents. Carrying out scenario analysis in line with the TCFD guidance will help trustees meet the minimum legal requirements in respect of climate change.
130. Legislation is not currently prescriptive about the requirement for scenario analysis, or the scenarios to be used, but Government’s new powers, if approved by Parliament, permit it to require schemes of a prescribed description to review the exposure of the scheme to risks of a prescribed description, and assess the assets of the scheme in a prescribed manner.

10.3 Expectations by scheme size and type

131. Managing risk and return is an essential part of trustee duties whatever the nature of benefits offered by a scheme, its size or time horizons. However, the resources available for schemes to carry out scenario analysis will necessarily vary by scheme size, and the way in which schemes use the available tools will vary according to the circumstances of each scheme.
132. All schemes should ask their asset managers and consultants for the outputs from any scenario analysis of portfolios administered on the scheme’s behalf, along with details of the scenarios considered, methodological approaches and assumptions.
133. For large schemes, proportionate assessment and management of the risks associated with climate change through scenario analysis will likely involve expenditure of significant time and resource. Such schemes will want to understand the design of quantitative analysis tools, including their underlying scenarios, assumptions and limitations, before determining the most appropriate tool(s) based on scheme-specific circumstances and investment beliefs. They

⁶⁴ Occupational Pension Schemes (Investment) Regulations 2005, Regulations 2(3)(b)(vi) and 2(3)(b)(iii)

⁶⁵ Section 249A(1) of the Pensions Act 2004 and Regulation 3(8)(h) of the Occupational Pension Schemes (Governance)(Amendment) Regulations 2018 (SI 2018/1103)

may also wish to use qualitative analysis to help develop climate change investment beliefs, if they are not already in place.

134. Schemes with lower levels of resource should still carry out a proportionate and effective analysis, and the expectation is that all schemes will make use of qualitative and quantitative analysis where possible. Possible approaches are set out in the section below.
135. For schemes without a budget for external advice, free-to-use tools such as PACTA (see below), can be used for quantitative analysis, while others are available for a qualitative assessment. Trustees should seek to interrogate the assumptions underlying those tools and consider carrying out qualitative scenario analysis to enhance their own understanding of climate-related risks.
136. For DB schemes, scenario analysis should be used to assess the impact of different scenarios on sponsor covenant and funding levels as well as investment portfolios.
137. For DC schemes, scenario analysis should focus on the effect of different warming and transition scenarios on members' pension pots. It is particularly important to apply scenario analysis in the design of default strategies before these are offered to members, and to continue to monitor as investment strategies, economic conditions and scenario analysis models evolve.

10.4 Which scenarios should trustees use?

138. It is important to avoid relying on a single scenario (otherwise the analysis risks being interpreted as a prediction), and that the scenarios used are plausible yet challenging. Trustees should look to analyse their scheme's position over a range of scenarios which illuminate future exposure to both transition and physical climate-related risks and opportunities. Typically, this should include:
 - **Orderly transition, 2°C or lower scenario** – emission reductions start now and continue in a measured way in line with the objectives of the Paris Agreement and the UK government's legally binding commitment to reduce emissions in the UK to net zero by 2050. Investors and companies face disruption from physical climate-related risks, yet these are much less severe than under a no transition scenario.
 - **An abrupt transition, 2°C or lower scenario** – little climate action in the short term, followed by a sudden and unanticipated tightening of policy as countries rush to get on track with the Paris Agreement. The falling cost of the solutions

may mean companies and investors face a double policy and technology shock⁶⁶.

- **No transition, pathway to 4+°C scenario** – a continuation of historic emission trends and a failure to transition away from fossil fuels. Physical climate-related risks are severe, and increase over time, causing widespread social and economic disruption, although conventional economic approaches are very likely to underestimate the impacts⁶⁷

139. Another key consideration is the time frame over which the analysis is done, as climate-related risks will evolve over time. It is recommended that trustees assess exposure to climate change within and beyond the normal timeframe of their investment strategy. With further warming effectively pre-loaded into the earth's climate system⁶⁸, the physical risk that pension schemes might face from climate change over the immediate decades is largely independent of the emission scenario selected⁶⁹. However, by the end of the century, the temperature span could range from 1.5°C to 6°C above pre-industrial levels⁷⁰.

140. To help companies and investors interpret this landscape, various reference scenarios are available. Some of these scenarios are integrated into free-to-use and third-party tools, through which investors can analyse their portfolios (see below). DB schemes may wish to find out which climate scenarios, if any, their sponsoring employer is using as it may be possible to apply these to the scheme in order to integrate consideration of covenant, investment and funding impacts.

141. However robust the analysis, trustees will want to bear in mind that numbers will be highly uncertain, especially for longer range and more extreme scenarios. – the models are not forecasts or predictions, but constructs to illustrate possibilities and build understanding.

⁶⁶ This draws on analysis by Cambridge University and DNB (2018), An energy transition risk stress test for the financial system of the Netherlands, https://www.dnb.nl/binaries/OS_Transition%20risk%20stress%20test%20versie_web_tcm46-379397.pdf (page 18)

⁶⁷ The climate scientist Kevin Anderson has warned that four degrees of warming is “incompatible with any reasonable characterisation of an organised, equitable and civilised global community”. (Source: “Climate Change Going Beyond Dangerous – Brutal Numbers and Tenuous Hope,” Development Dialogue 61, September 2012)

⁶⁸ See Zickfeld and Herrington (2015) “The time lag between a carbon dioxide emission and maximum warming increases with the size of the emission” <https://iopscience.iop.org/article/10.1088/1748-9326/10/3/031001>

⁶⁹ See for example the graphs on page 27 of the IPCC's 5th Assessment Report (2014) https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf

⁷⁰ “Climate scenarios demystified: a climate scenario guide for investors”.

10.5 Levels and types of scenario analysis

142. Scenario analysis can be carried out at a variety of levels⁷¹ - each has its advantages and disadvantages - adopting a “top down” or “bottom up” approach:

Top-down models

These incorporate macro-economic impacts of climate change on economic growth, inflation and interest rates, and use this to model the impacts on pension scheme assets broken down by asset class. More granular models may look at breaking down the impacts on returns by sector.

Top-down modelling can also be used to analyse the effect of variation of the factors above on defined benefit liabilities, potentially combined with longevity impacts.

It therefore enables DC and DB schemes to consider the implications for strategic asset allocation. It also permits DB schemes to carry out integrated risk management, considering assets, liabilities and the employer covenant in a consistent way.

The consultants to the scheme may offer this type of analysis.

Bottom-up models

Bottom-up models seek to analyse the impact of climate change on individual securities and aggregate these to the level of company, sector or whole portfolio.

Company level analysis – this is the most granular approach and allows for a high degree of company-specific tailoring, such as a company’s future strategic direction and ability to adapt. However, it will typically require a large amount of data and resource. It is more suited for use by investment analysts that are studying individual companies in an investment portfolio than for trustees taking a DIY approach, except possibly, in the case of DB schemes, for the impact on the sponsoring employer. When the results are aggregated across all investee companies in a particular sector, it becomes a form of sector-level analysis.

Sector level analysis – this offers the ability to home in on an individual ‘at-risk’ sector. Whilst the approach disregards effects in the broader portfolio which might offset the impairment in those sectors being analysed, this is probably the easiest type of analysis for pension schemes taking a DIY approach. The PACTA tool described below is a form of readymade sector level analysis. When applied

⁷¹ The classification here uses the IIGCC’s Navigating climate scenario analysis: A guide for institutional investors <https://www.iigcc.org/download/navigating-climate-scenario-analysis-a-guide-for-institutional-investors/> as a start point.

across all sectors that make up a fund, it becomes a form of portfolio-level analysis.

Portfolio level analysis – this typically uses a bottom-up approach to aggregate climate impacts on individual securities. Such an approach can be applied most readily to listed equity and corporate bond portfolios. The high-level view may understate the importance of sectoral or regional impacts, if these are ‘netted out’ in the end results, so it is worth unpacking the results to look at the implications for individual sectors and asset classes. The scheme’s asset manager may well offer this kind of analysis.

10.6 Integrated investment, covenant and funding scenario analysis (DB schemes)

143. In line with The Pensions Regulator’s guidance to use an integrated risk management approach⁷², DB schemes should seek to conduct scenario analysis that combines climate impacts on investment, covenant and funding. This will enable them to explore the extent to which the liability impacts might be hedged by corresponding asset impacts, and how climate change might affect the employer’s ability to meet future contribution requirements.
144. Modelling climate impacts on the funding position will necessarily require a top-down approach that incorporates possible impacts on real discount rates. Such analysis is subject to considerable uncertainty due to the challenges of modelling macroeconomic impacts such as interest rates and inflation, but it can nonetheless be a valuable exercise. Ideally, the analysis would also incorporate impacts on demographic variables, particularly mortality rates⁷³. Any modelling of the covenant impacts should use the same scenarios for consistency, although the scenarios may need extending to include the variables of most relevance to the sponsoring employer. For example, assumptions may be needed about legislative interventions and technological innovations affecting the employer’s sector (e.g. automotive). Input from the employer and/or covenant advisers is likely to be needed.
145. In the near term, DB schemes may find it easiest to start with bottom-up analysis of their equity and corporate bond investments (see below) alongside high-level consideration of the covenant impacts, perhaps using scenario analysis that the employer has prepared for its own risk management.

⁷² See The Pensions Regulator’s regulatory guidance on Integrated Risk Management, <https://www.thepensionsregulator.gov.uk/en/document-library/regulatory-guidance/integrated-risk-management>

⁷³ See, for example, ‘Resource and Environment Issues for Pension Actuaries: Implications for Setting Mortality Assumptions’ from the IFoA, <https://www.actuaries.org.uk/documents/environment-issues-pension-actuaries-implications-setting-mortality-assumptions>

10.7 Qualitative and quantitative analysis

146. The TCFD suggests that asset owners might start with qualitative scenarios and develop more quantitative analysis over time.
147. Qualitative approaches are essentially narratives that describe how climate-related risks and opportunities may crystallise over time. They can help trustees understand how the world may look different in the future. Rather than developing their own scenarios from scratch, trustees could use the descriptions of publicly available reference scenarios as the basis of a thought experiment⁷⁴.
148. Qualitative scenarios are particularly useful for aspects that are hard to model in a quantitative manner, for example:
- longer term scenarios (e.g. 2050 onwards) where the impacts are highly uncertain;
 - higher temperature scenarios (e.g. 4 degrees warming pathway), due to the likelihood that conventional economic approaches will underestimate the impacts; and
 - the effects on asset classes for which a company-level approach is not feasible due to lack of data, such as property, infrastructure and other private market investments.
149. Trustees may decide to focus on quantitative analysis, using one of the approaches outlined above and below, but narrative descriptions are still likely to be helpful in building their understanding of the scenarios and judging the appropriateness of the numerical results.

10.8 Approaches to conducting scenario analysis

150. Three ways in which to carry out a scenario analysis are described below. Where resources are not available for all sectors or all assets, it may be better to begin by focusing on some higher risk sectors or asset classes and reporting on the assets which are considered – but working towards including all assets over time.
151. A variety of approaches to climate scenario analysis are available to schemes depending on their resources and capabilities.

Ask your asset manager/s

152. All schemes should ask their asset managers whether they carry out scenario analysis in relation to portfolios which they administer on the scheme's behalf. Where the manager carries out scenario analysis, trustees should ask for details

⁷⁴ See, for example, 'Climate scenarios demystified. A climate scenario guide for investors' from Cicero, <https://www.cicero.oslo.no/en/publications/internal/2867>

of the scenarios as well as the output of the analysis in relation to the scheme's portfolio.

153. Scenarios and underlying assumptions may differ between asset managers. Trustees who obtain scenario analysis from more than one manager should exercise care when analysing the outputs. It may not be appropriate to aggregate them.
154. Where portfolio-level analysis is not available, trustees should ask for the results of any other analysis that the asset manager is using to identify and assess climate-related risks in relation to the portfolio, such as carbon footprint data. They should also ask what the asset managers are doing differently as a result of the analysis, to mitigate the risks.
155. Where no scenario analysis is taking place, particularly for easier-to-analyse asset classes such as equities and corporate bonds, trustees should ask about their managers' plans for adopting scenario analysis and encourage faster action if this is not ambitious enough.

Ask your consultant or a third party provider

156. Schemes with sufficient budget should consider asking their consultant or a third party provider (some of whom specialise in this area) for scenario analysis. They may be able to provide scheme-level analysis that is applied consistently between different asset classes and assets managed by different asset managers. DB schemes may wish to enquire whether their consultants can produce scenario analysis which integrates the impacts on their assets, liabilities and covenant.

Case study

An example of what can be achieved from a top-down perspective is shown below for the Lloyds Banking Group (LBG) pension schemes. Their trustee started with a simple question: How robust is the investment portfolio to climate-related risks?

To answer this, the internal executive team worked with their strategic investment advisor to assess, at a broad level, the impact on each of the asset classes held in their schemes' portfolios under two of the four climate change scenarios constructed by the Inter-governmental Panel on Climate Change - known technically as Representative Concentration Pathways 2.6 and 6.0 but re-labelled 'Globally Co-ordinated Action (GCA)' (a below 2°C scenario) and 'Lowest Common Denominator (LCD)' (probably above 2°C but below 4°C) respectively.

The advisor applied numerical stresses to each asset class (and liabilities for a fully-integrated analysis). However, to reduce reliance on numerical assumptions and to create a more compelling visual, each asset class was then mapped to one of three risk groups (red, amber and green in order of decreasing severity) that revealed four general principles:

i. developed nations (including the UK Government) should be capable of repaying sovereign debt in all but the most extreme climate scenarios, over the time horizon considered. For emerging market sovereign debt, the picture is more nuanced.

ii. The higher the asset is in a company's capital structure, the lower the risk of permanent loss of capital arising from climate change. So broadly, equities are riskier than corporate bonds.

iii. The pace and impact of climate change is uncertain, therefore lending for longer periods is riskier than lending for shorter periods.

Asset Class	Current SAA	Risk Assessment	
		GCA	LCD
Liability hedging			
LDI	35%		
Cash	2.5%		
Secure Income			
Highly liquid credit	2.5%		
'Buy & maintain' Bonds	5.5%		
Global corporate bonds	8%		
Collateralised loans	4%		
Other contractual cash flows	2.5%		
Alternative Credit			
Emerging market debt	4%		
Liquid credit opportunities	12%		
Illiquid credit opportunities	4%		
Return Seeking			
Global equities	5%		
Private equity	2.5%		
Hedge funds	7.5%		
Real estate & infrastructure (non-core)	5%		
	100%		

Key :  = no material risk,  = moderate risk,  = significant risk

The LBG trustee was able to draw the following conclusions from this work in relation to its defined benefit schemes

1. Climate change is a risk that could impair the trustee's ability to meet the schemes' funding objectives
2. The asset portfolio is reasonably robust to a 2°C warming scenario, but more exposed to higher warming scenarios.
3. The asset classes most at risk of climate change are those that the schemes are likely to divest from in the medium term as part of their de-risking 'journey'.

4. Further (bottom-up) analysis should focus on the bond assets as these will form the vast majority of the schemes' assets over the period in which climate change plays out.

For the defined contribution scheme, whilst the above risk assessment holds, a different strategy is required to manage climate risk. This is because defined contribution members are typically younger, with longer investment time horizons (running deeper into the period over which climate change is expected to play out) and members' pots tend to be significantly invested in equities rather than bonds.

Do it yourself

157. Where schemes do not wish to incur consultancy fees, or wish to carry out an analysis in-house, a variety of tools are available. These are generally only applicable to listed equity and corporate bond portfolios, but they nonetheless can provide useful insights into the scheme's climate-related risk exposures.

158. Note that some of these tools rely on detailed knowledge of fund holdings. Trustees can ask asset managers for this information or request that managers use the free tools themselves and supply the output.

Qualitative tools

The following tools can help schemes to carry out a qualitative analysis of their holdings:

[Transition pathway initiative \(TPI\)](#) – the TPI tool allows pension schemes to review carbon management quality and carbon performance for key companies within high risk sectors. Firms who are integrating climate change into their operational decision-making and have lower carbon intensities are likely to be better prepared for the transition to a lower carbon economy. Schemes can use the analysis to analyse their holdings by sector in firms who are more or less well-prepared

[2 degrees of separation: Transition risk for oil & gas in a low carbon world](#) – sector-specific analysis of the risk to individual oil and gas firms of a transition to a low carbon economy, measured by the percentage of capital expenditure which is incompatible with a 1.75°C or 2°C increase in global temperatures.

Quantitative tools

[PACTA](#) (Paris Agreement Capital Transition Assessment) – the PACTA tool will produce a free report on upload of a portfolio of equities and bonds by their International Securities Identification Number (ISIN). It does not directly show the financial risk to portfolios from climate change, but instead shows the degree to which the strategies of the firms in which the scheme has invested are aligned with a given climate scenario. Over 600 investors have used this tool to carry out an analysis of over 3,000 portfolios to date.

[PRA stress test data](#) – some organisations have published data on the effects of different scenarios on asset prices. For example, the Prudential Regulatory Authority has produced hypothetical transition scenarios with assumed impacts by sector, which can be applied to a scheme’s assets to calculate the possible effect on asset values. Where trustees cannot obtain asset data which is split into these sectors, they may find it necessary to use estimates or ranges. [See Appendix 3]

10.9 Interpreting the results

159. Once complete, investors face the question of how to interpret climate scenario analysis. Results will vary according to the tool used, but the outputs are likely to be in the form of:

- metrics illustrating the alignment (or non-alignment) of the portfolio to a given scenario; and/or
- financial analysis such as an illustration of the change in asset value.

160. Some points for trustees to consider may include⁷⁵:

- What does the analysis show about the likely impacts on different asset classes and sectors?
- Where in the investment portfolio are climate-related risks most concentrated?
- Over which timeframe are climate-related risks and opportunities likely to materialise?
- What are the trends and drivers that could influence exposure to climate-related issues in the near to mid-term?
- What are the key dependencies and limitations with the analysis?
- (for Defined Benefit), What are the key climate-related factors (whether through transition risk or physical risk) which will affect the strength of the employer covenant? Identify climate indicators of particular relevance to the sponsoring employer for use in covenant monitoring.

10.10 Next steps

161. Trustees should consider the implications of their scenario analysis at each stage of the investment process outlined in [Part II]) in order to identify key actions. Examples include revisiting investment beliefs, considering adjustments to strategic asset allocation and mandates for asset managers and advisers, as well as voting and stewardship priorities.

⁷⁵ Adapted from “Navigating climate scenario analysis a guide for institutional investors by IIGCC 2019 page 51 <https://www.iigcc.org/resource/navigating-climate-scenario-analysis-a-guide-for-institutional-investors/>

Reporting

162. When trustees report climate scenario information to beneficiaries and other stakeholders, they should disclose all the prescribed information in [section 1] above, but they should consider the needs and expertise of their audience, and layer the information appropriately.

163. The TCFD guidance for asset owners is that they should report:

- the climate-related scenarios and associated time horizon(s) considered;
- the critical input parameters, assumptions and analytical choices for the scenarios used;
- how their strategies may be affected by climate-related risks and opportunities;
- how climate scenarios are used, e.g. to inform investments; and
- how their strategies might change to address potential risks and opportunities.

164. As stated earlier, in making such disclosures, trustees should apply the TCFD's 7 principles for effective disclosure (see section 9.1).

165. Schemes might consider structuring their disclosures as follows:

- **Summary** – a single paragraph narrative summary of how resilient the scheme is to each scenario considered, and example or summary action taken as a result.
- **Detail** – more detail on the climate-related scenarios considered; data on potential asset value reductions in the different scenarios, by asset class, sector or geography as appropriate; more detail of how the scenarios have been and will be acted on.
- **Technical annex** – the technical detail of the scenarios used; any other technical information which is judged relevant but too complicated for the large majority of possible readers – e.g. value at risk or other quantitative measures, and assumptions underpinning the analysis.

Updating

166. Policies and tools are evolving rapidly in the area of climate scenario analysis. Schemes should keep developments under review and consider on an annual basis whether to update their analysis. For small schemes, such a review could be light touch, but larger schemes should consider a fuller update as models and portfolios change.

11. Setting metrics and targets to measure and manage climate-related risk exposure

- Metrics have a role to play in activities throughout the pension scheme's investment decision-making process to measure, manage and disclose climate risk.
- Target-setting is a useful tool for trustee boards to track their efforts to reduce climate change risk exposure and maximise climate change investment opportunities. Targets should be embedded in governance processes.
- Trustees should select both: (a) outcome metrics (measuring the climate change risks and impacts of their investments, such as greenhouse gas emissions; and (b) process metrics – those reflecting governance processes for managing exposure to climate change
- The guidance sets out metrics for core reporting and (for leaders) additional reporting – across a variety of asset classes.
- All trustees should request data from their asset manager on carbon footprinting (weighted average carbon intensity is the leading metric), exposure to carbon-related assets, and the share of their portfolio in which climate change is actively considered, including through engagement and voting.
- Trustees should also record the proportion of board meetings given to climate issues.

11.1 Introduction to metrics

167. The TCFD report included a recommendation that pension scheme trustees report publicly the metrics they use to govern their fund's climate change risk exposure. The Taskforce's report went into further detail about the kind of metrics asset owners should use in line with this recommendation, covering both the fund's contribution to climate change, including exposure to carbon-heavy industries, and activities trustees have undertaken to reduce this exposure.

168. In this chapter, the guidance lays out the rationale for disclosure and use of metrics, current and future status of requirements to update and disclose relevant metrics and targets – dependent on scheme size – and provides detail of the sorts of metrics all trustees should consider embedding within their risk governance processes.

11.2 Role of metrics and targets – measure, manage and disclose

169. Metrics and targets have a role to play in activities throughout the pension scheme's investment decision-making process, from setting investment beliefs to choosing an asset manager that aligns with these; and from measuring exposure to climate change risks and opportunities, through setting targets to reduce or increase certain types of exposure, to monitoring progress against these targeted outcomes.
170. It is important that the metrics incorporated by the trustees are tailored according to their relevance to the scheme. Calculating and reporting metrics and targets should not be seen as a tick-box exercise focused solely on disclosing a number to members but should also be used to measure and manage climate change risk exposure and determine, monitor and update investment strategies accordingly.

11.3 Minimum legal requirements

171. Trustees have fiduciary and statutory duties to consider and report on how they take into account the financially material risks associated with climate change (see chapter 3).
172. Legislation is not currently prescriptive about the climate metrics trustees should use for decision-making or for disclosure, but Government's new powers, if approved by Parliament, permit it to require schemes of a prescribed description to undertake effective governance of climate risk and opportunities, including setting and reporting against targets.

11.4 Expectation by scheme size

173. Regardless of differences in legal requirements, schemes of all sizes carrying out TCFD-aligned reporting should set metrics whatever the nature of benefits offered by a scheme or its time horizons. However, the number and range of metrics they select and the comprehensiveness of their reporting will necessarily vary by scheme size.
174. All schemes should request data from their asset managers on carbon footprinting, engagement and exposure to carbon-related assets. They should analyse that data, and use it to inform decision-making, as well as aggregating the data to an asset class-, fund- or portfolio-level and report it. It is recognised that data needs to come not just from the asset manager but from listed companies, real-asset holders and national governments. This can be hard to solicit. In such an event, however, trustees can request that service providers analyse their funds using market average techniques and assumption-based modelling.

175. For schemes which carry out their own engagement and/or voting, schemes should set metrics to assess and report on the extent and effectiveness of those activities. Larger schemes may wish to carry out some of the other activities listed under additional reporting, in section 11.8 below, to demonstrate leadership.

11.5 Selection of metrics

176. The metrics that trustees select to measure their exposure to climate change as a risk to their investments should be dependent on the characteristics of the scheme. But trustees should also look to link their metrics and targets to their investment beliefs and Statement of Investment Principles (SIP).

177. Trustees' choice of metrics should also include both outcome metrics (see 11.5.1) – those measuring the climate change risks and impacts of their investments, such as greenhouse gas emissions – and process metrics (see 11.5.2) – those reflecting governance processes for managing exposure to climate change.

178. The lack of available data is a commonly reported pitfall when schemes seek to calculate the TCFD's recommended metrics. Trustees should take into the account the availability and reliability of data when choosing a metrics against which to report.

179. Where possible, schemes should request and collate data in line with the asset class schedules provided and also at an overall fund level. There are two levels of metrics to be collected

- **Core Reporting** - These are the fund metrics that it is reasonable for all schemes to report on (as well as the activity metrics)
- **Additional Reporting** - These are the metrics that higher governance schemes can consider to demonstrate leadership.

11.5.1 Outcome metrics – GHG emissions and others

180. The level of greenhouse gas (GHG) emissions is the key outcome metric by which pension schemes can measure their transition risk, as well as being the most straightforward. There are difficulties in doing this with some asset classes such as sovereign debt but this is one of the most effective metrics – albeit backward-looking – through which trustees can assess their exposure to climate change. Disclosure of GHG emissions will also enable comparison between pension schemes and against industry benchmarks.

181. Section 11.7 and 11.8 go into more detail of the different measures trustees can use to assess the GHG emissions associated with their scheme

182. Advanced metrics, such as weighted average carbon intensity, are better designed to determine a scheme's exposure to high carbon industries and therefore their exposure to transition to a lower-carbon global economy. These

metrics adjust for portfolio value, making comparison with other schemes and non-equity classes much easier.

183. Basic metrics, including absolute GHG emissions are more effective in communicating contribution to climate change but they are difficult to translate into exposure to risk. Moreover, given that these metrics use a scheme's proportional share of equity, an increase in share prices, all else equal, will result in a decrease in the scheme's total emissions.

11.5.2 Process metrics – governance, stewardship and voting

184. Outcome metrics enable a trustee or manager to measure their climate change risk and opportunity exposure; process metrics allow them to disclose how they are managing that exposure.
185. Sections 11.7 and 11.8 list out a number of metrics that can be disclosed as part of core and additional reporting. Broadly, process metrics rely much less on disclosures from others in the investment chain. However, key process metrics such as voting and stewardship records do require information to be passed from asset managers to trustees in order that schemes can disclose their record to members.
186. Trustees can still report the extent to which they engage with issuers on climate change, the extent to which the trustee board takes account of climate change risk and the weight given to climate change in discussions and mandate-setting with their managers without transfer of full voting and stewardship records to schemes. However, as with outcome metrics, where pension schemes align fully with TCFD and ask the right questions of their service providers, it should drive improved reporting by asset managers and other intermediaries.

11.6 Targets

187. Once metrics have been established, the TCFD report recommends that pension scheme trustees should set quantitative targets to manage climate-related financial risks and opportunities, including time frames for reaching these targets.
188. Target-setting is a useful tool for trustee boards to track their efforts to reduce climate change risk exposure and maximise climate change investment opportunities. Targets should be embedded in governance processes, so that trustees can hold managers and consultants to account for performance against their prescribed objectives. Quantification of commitments, including those made within the Statement of Investment Principles, as KPIs and targets not only consolidates a trustee board's management of climate-related risk but signals to members that schemes consider it to be of sufficient importance to commit in the form of accountable targets.

189. Many listed companies and several pension schemes are beginning to set targets and commitments in relation to climate change, including committing to Net Zero carbon emissions by 2050, in line with UK Government policy. Schemes should assess how relevant such commitments are to their funds and build in milestones in the nearer term, setting a clear plan as to how they hope to meet short and medium-term targets.
190. Several benchmarks are publicly available for many of the metrics introduced in this guidance. MSCI produce a free directory of Weighted Average Carbon Intensity for 20 indexes⁷⁶.

11.7 Core metrics

191. The metrics that follow in the next sections are all recommended. There are others which schemes can enlist to manage their climate-related financial risk.
192. This section covers core metrics, which all trustees should seek to collect.

Different classifications of emissions

Scope 1 emissions cover those emissions from sources owned or controlled by the company – for example, emissions caused by direct combustion of fuel by the company in a manufacturing process.

Scope 2 emissions are indirect emissions, caused by the generation of the energy, principally electricity, that the company uses. For example, emissions associated with the electricity used in cooling processes.

Scope 3 emissions are other indirect emissions that occur in the value chain of the reporting company, including both upstream (providers of goods and services to the company) and downstream (from users of the company's products and services).

11.7.1 Listed equities and Corporate Debt

Data availability is greater here than in other asset classes such as private equity/debt or sovereign bonds, although it may still be limited in certain jurisdictions.

⁷⁶ MSCI Index Carbon Footprint Metrics - <https://www.msci.com/index-carbon-footprint-metrics>

Outcome Metrics

Weighted Average Carbon Intensity	
Risk Type: Transition	Dependencies: Company Disclosure
<p>This is the leading metric for measuring a fund’s exposure to carbon, expressed in tons of CO₂ per millions of dollars of revenue.</p> $\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} * \frac{\text{company's Scope 1 and Scope 2 GHG emissions}_i}{\text{company's \$M revenue}_i} \right)$ <p>For this metric, a trustee needs the share of their fund invested in a given company (the weight) to multiply by the ratio of a company’s emissions to its revenue. This is dependent on the issuer’s disclosure of its GHG emissions.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> • Simple to calculate and set targets • Easy to communicate to trustee board and members • Measured relative to portfolio value; agnostic to ownership share of company. 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> • Does not account for Scope 3 emissions (less often available) • Metric will appear lower for those companies with high revenue driven by high prices • Sensitive to outliers (high or low)

Total GHG Emissions	
Risk Type: Transition	Dependencies: Company Disclosure
<p>This metric for measures the total absolute greenhouse gas emissions attributable to a portfolio. This can be used to give a sense of high/medium/low emissions and the associated exposure to a transition to an economy that produces net zero emissions in the future.</p> $\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{company's market cap}_i} * \text{company's Scope 1 and Scope 2 GHG emissions}_i \right)$ <p>For this metric, a trustee needs the share of a given company that the pension scheme holds (the weight) to multiply by the company’s emissions, effectively measuring the pension scheme’s share of the company’s emissions. This is dependent on the issuer’s disclosure of its Scope 1 and Scope 2 GHG emissions.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> • Simple to calculate • Easy to communicate to trustee board and members • Easier to track progress 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> • Does not account for Scope 3 emissions (less often available) • No normalisation between funds; • With an increase in market cap, metric goes down i.e. improvement in performance without action.

Exposure to Carbon-Related Assets	
Risk Type: Transition	Dependencies: N/A
<p>This metric is the most basic calculation of value to trustees attempting to understand the scheme's exposure to transition risk.</p> $\frac{\sum \text{current value of investments in carbon related companies}}{\text{current portfolio value}} * 100$ <p>For this metric, a trustee needs to classify whether an investment should be considered 'carbon-related'; the Global Industry Classification Standard (GICS) is useful for this. The formula then allows trustees to understand how great a share of the fund these assets, the most vulnerable to a transition to a low-carbon economy, represent.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> • Very simple to calculate • Very easy to communicate to trustee board and members • Does not require significant disclosure of data by the asset manager 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> • Does not account for emissions, merely carbon dependency • Company activities may be a mix of carbon-related and non-carbon-related.

Proportion of fund invested in low carbon opportunities	
Risk Type: Transition	Dependencies: N/A
<p>This metric enables trustees track the extent to which they are taking advantage of investment opportunities that emerge from an economic shift to a lower carbon industrial system. These includes low carbon/transition sectors such as renewable energy, and electric vehicles amongst others. In theory, this metric should grow over time as more and more listed companies lay out transition pathways that enable them to be classified as low-carbon related.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> • Very easy to calculate • Not dependent on any other part of the investment chain 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> • 'Low carbon opportunities' very vague • Without consensus on definition, open to 'greenwashing'

Process Metrics

Share of portfolio held at year end for which engagement or voting on climate-related risk and opportunities has been a substantive topic	
Risk Type: Transition	Dependencies: Asset Manager engagement
<p>Engagement is a key route through which trustees can reduce their exposure to climate change risk. The investments they make give them not just voting rights but significant influence over the direction of a company. Asset managers should be using this influence to manage the scheme's exposure to climate change risk and opportunities, highlighting any concerns about the direction of a firm during engagement activity that they undertake. This metric allows a trustee to assess the extent to which an asset manager is prioritising engagement and/or voting on the topic of climate change.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> Does not require data 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> Engagement measure is binary; no measure of influence on company direction Can be subject to "greenwash".

Share of board meetings per year in which climate-related issues have been a substantive agenda item	
Risk Type: Transition	Dependencies: N/A
<p>This is a very basic metric measuring the frequency of discussion of climate risk at trustee board meetings. Discussion at the pension scheme's highest level of governance is a strong signal that the scheme is actively considering climate risk.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> Very simple to calculate Measures senior incorporation of climate risk within governance 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> 'Substantive' is subjective Binary; does not measure depth of discussion or actions taken forward

Share of portfolio held at year end for which climate-related metrics of an acceptable quality have been obtained	
Transition and Physical	Dependencies: Company and Asset Manager Disclosure
The share of the portfolio on which high quality climate-related disclosures are taking place is a good indication of the integration of climate risk and opportunity in trustee and asset manager decision-making. Without such disclosures, the ability of trustees to carry out governance and manage risks associated with climate change is significantly reduced, as is the ability to set out robust strategies.	
Advantages over other metrics <ul style="list-style-type: none"> • Very simple to understand • Focuses trustee attention on improving data quality as part of asset manager appointment and monitoring decisions. 	Potential Drawbacks <ul style="list-style-type: none"> • Will not offer long-term time series – acceptable quality threshold likely to increase over time. • Will be sensitive to asset classes held. Disclosure from private and emerging markets very likely to be worse.

11.7.2 Fixed Income - Sovereign

193. This asset class comprises sovereign bonds. Sovereign bonds are generally difficult to analyse in terms of climate change risk as this relies on disclosure and management of risk exposure by national governments, something that asset managers cannot readily lobby for. The process for taking account of embodied emissions from imports and exports also adds complexity and uncertainty. Moreover, sovereign debt is not subject to investor engagement or voting and therefore the influence trustees can have over the management of climate risk is much reduced.

Outcome Metrics

Current forecast of GHG emissions	
Risk Type: Transition	Dependencies: N/A
This should be publicly available or easily commissioned. It can measure both the national government commitments (for example, to net-zero emissions) and the current projected trend rate of GHG emissions.	
Advantages over other metrics <ul style="list-style-type: none"> • Often publicly available research • Easy to calculate/commission 	Potential Drawbacks <ul style="list-style-type: none"> • Any under/overperformance against GHG targets potentially already priced in

Process Metrics

To what extent (high/medium/low) does the scheme’s asset managers consider climate change in its analysis of sovereign bonds?	
Risk Type: Transition	Dependencies: Asset Manager Disclosure
<p>Sovereign bond/debt analysis typically centres around credit rating evaluation and assessment of default risk. Asset Managers are able to assess the climate risk attached to government bonds. This might include:</p> <ul style="list-style-type: none"> • Paris Agreement Alignment • Net-Zero Commitment • Decarbonisation progress • Power Generation transition 	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> • Does not require quantitative data • Covers a large proportion of the typical fund 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> • Difficult to assess the direct impact of a top-level commitment • ‘Considering’ climate change is not the same as analysing risk in depth

11.7.3 Real assets

194. Real assets, including real estate, infrastructure, energy, amongst others, is typically the most diverse share of a pension fund. In the absence of daily pricing of these assets, susceptibility to climate change risk is much more difficult to detect and poses a longer-term risk to the assets’ value. However, there is often more data available to an institutional investor on – for example – a particular building project’s environment impact/energy use than other asset classes.

Process Metrics

To what extent does the scheme’s asset manager consider climate change in its analysis of real assets?	
Risk Type: Transition	Dependencies: Asset Manager Disclosure
<p>Asset manager analysis of the viability of real asset investment is often based on the cost-benefit analysis of an investment including forensic assessment of the financials of a particular property investment or infrastructure opportunity. This metric enables trustees to understand the degree to which managers are taking into account both the physical risk, such as weather-related losses, sea level exposure, and the transition risk associated with the movement towards greener infrastructure as a default.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> • Does not require quantitative data • Covers a large proportion of the typical fund 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> • Difficult to assess the direct impact of a top-level commitment • ‘Considering’ climate change is not the same as analysing risk in depth

11.8 Additional Metrics

195. It is recognised that there exist significant and legitimate constraints on smaller pension schemes that prevent trustees from carrying out extensive, detailed or technical TCFD alignment reporting. That is why the preceding section features core metrics that have been carefully selected based on their appropriateness irrespective of scheme size and resources.

196. This section is targeted at those trustees and managers who want to go further. This could be large schemes who have capacity and capability and want to demonstrate leadership in a developing area. This could be smaller schemes who have particularly engaged trustees who want to be ahead of the curve on climate change and go beyond minimum reporting on risk and opportunity exposure.

11.8.1 Equity and Corporate Debt

Outcome Metrics

Weighted Average Carbon Intensity (incl. Scope 3)	
Risk Type: Transition	Dependencies: Company Disclosure
<p>Building on the leading metric for measuring a fund's exposure to carbon, including Scope 3 emissions requires trustees to retrieve data on emissions that occur within the value chain of the company in which a pension scheme is invested. Unlike Scope 2 which is limited to the indirect emissions from power generation by the listed company, e Scope 3 emissions include all activity by the company and its producers and customers.</p> $\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} * \frac{\text{company's Scope 1, Scope 2 and Scope 3 GHG emissions}_i}{\text{company's \$M revenue}_i} \right)$ <p>For this metric, a trustee needs the share of their fund invested in a given company (the weight) to multiply by the ratio of a company's emissions to its revenue. This is dependent on not just the issuer's disclosure of its GHG emissions, but other companies throughout its value chain.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> Fully accounts for all emissions associated with a company holding Easy to communicate to trustee board and members Measured relative to portfolio value; agnostic to ownership share of company. 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> Scope 3 emissions less often available Metric will appear low for those companies with high revenue driven by high prices Sensitive to outliers (high or low)

Proportion of fund highly exposed to key indicators of physical risk	
Risk Type: Physical	Dependencies: Company Disclosure
<p>Physical risk assessment and analysis are generally much more complex than transition risk metrics. Physical risk is much more uncertain in terms of timing and size of impact, and therefore relies on assumption-heavy modelling.</p> <p>This metric would allow a trustee to track their exposure to the physical risks associated with climate change, including catastrophic weather events. Key indicators of such risk include sea level exposure, heatwave exposure, and drought risk. These are difficult to estimate and may only apply to a limited number of investments. Many listed companies make regular assessment of susceptibility to such risks but disclosure of such assessments may require engagement by the asset manager.</p>	
Advantages over other metrics	Potential Drawbacks
<ul style="list-style-type: none"> • Direct measure of those companies or assets held whose operations are most vulnerable • Easy to communicate to trustee board and members 	<ul style="list-style-type: none"> • Indicators of physical risk difficult to pin down and forecast • Requires significant engagement

Process Metrics

Proportion of companies held with climate change risk mitigation plans	
Risk Type: Transition	Dependencies: Company Disclosure
<p>This metric is considered advanced as it will require forensic assessment of all companies in which a pension scheme is invested. This will include whether companies are signed up to a transition pathway, have made commitments to net-zero emissions, have published a plan to reduce carbon-dependency and have committed to targets based on science. This will require a high degree of resource such that investment consultants or other service providers may be best placed to conduct this analysis.</p>	
Advantages over other metrics	Potential Drawbacks
<ul style="list-style-type: none"> • Simple to calculate and set targets • Easy to communicate to trustee board and members 	<ul style="list-style-type: none"> • Mitigation plans may be weak or insufficient. • May only consider scope 1 and 2 emissions

11.8.2 Fixed Income – Sovereign
Process Metrics

Proportion of sovereign bonds held issued by countries with Net Zero 2050 commitments	
Risk Type: Transition	Dependencies: Policy Detail
<p>Basic process metrics that can be used to assess exposure to sovereign bond risk focus on the degree to which an asset manager conducts climate-related sovereign debt analysis. Advanced metrics in this area focus on the results of this analysis. The key signal national governments give to investors on this topic is their commitment to international agreements such as the Paris Agreement. Many other nations have made similar commitments. Stewardship and engagement are both difficult with this asset class, so exposure to countries with no such commitment often reflects carbon-dependency and therefore risk.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> • Does not require complex data, simply adding up commitments • In the absence of any other tools or intelligence, gives the best estimate on an issuer’s decarbonisation intention. 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> • Difficult to assess the direct impact of a top-level commitment • ‘Given ubiquity of such commitments not as useful as other metrics; little differentiation between schemes

11.8.3 Real assets
Outcome Metrics

Quantification of estimated financial loss in the event of extreme weather events	
Risk Type: Physical	Dependencies: Modelling Capability
<p>Schemes with large holdings in infrastructure and real estate should be generally aware of their exposure to the physical risk of such assets being affected by severe climate change, such as flooding, hurricanes etc. This awareness could be considered a core metric. To go further, and quantify this assessment into an anticipated loss to the value of the fund caused by such events should be considered an advanced metric, based on dependency on modelling and data.</p> $\sum_n^i (\text{chance of event} * \text{proportion of value lost} * \text{current value of investment}_i)$	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> • Direct impact on fund value measured • Allows for sensitivity analysis/varying assumptions 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> • Requires complex meteorological and financial modelling

Process Metrics

Share of real assets covered by industry standard metrics on climate change/environmental impact	
Risk Type: Transition/Physical	Dependencies: Real Asset Holder Disclosure
<p>There are many analytical tools available that will provide investors and their managers with information, including scores and metrics, on the environmental impact, including carbon footprint, of a given real estate project. Examples include the Global Real Estate Sustainability Benchmark.</p> <p>Trustees could work out the number or share of their real asset investments for which – for example – the GRESB data is available.</p>	
<p>Advantages over other metrics</p> <ul style="list-style-type: none"> • Requires little work on the part of the trustee; simply collation • Very simple to understand 	<p>Potential Drawbacks</p> <ul style="list-style-type: none"> • Typically requires payment for such data/information • More complex for s those with many real asset investments • Investments may be covered by industry standard metrics such as GRSB but may be relatively low scorers

PART IV - Next steps

Appendix 1 - TCFD guidance on recommended disclosures

Key: IB – Investment beliefs (see Chapter 5)

IS – Investment Strategy (see Chapter 6)

St – Stewardship (see Chapter 7)

DB – Defined Benefit specific (covenant and funding) (see Chapter 8)

M – Metrics and targets (see Chapter 11)

Governance		
Disclose the organisation’s governance around climate-related risks and opportunities		
<p>Recommended Disclosure a)</p> <p>Describe the board’s oversight of climate-related risks and opportunities</p>	<p>Guidance for All Sectors</p> <p>In describing the board’s oversight of climate-related issues, organisations should consider including a discussion of the following:</p> <ul style="list-style-type: none"> i. processes and frequency by which the board and/or board committees (e.g., audit, risk, or other committees) are informed about climate-related issues, ii. whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organisation’s performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures, and iii. how the board monitors and oversees progress against goals and targets for addressing climate-related issues. 	<p>IB2</p> <p>IS1</p> <p>IS8</p> <p>DB1</p> <p>IS16</p>
<p>Recommended Disclosure b)</p> <p>Describe management’s role in assessing and managing climate-related risks and opportunities.</p>	<p>Guidance for All Sectors</p> <p>In describing management’s role related to the assessment and management of climate-related issues, organisations should consider including the following information:</p> <ul style="list-style-type: none"> i. whether the organisation has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues, ii. a description of the associated organisational structure(s), iii. processes by which management is informed about climate-related issues, and iv. how management (through specific positions and/or management committees) monitors climate-related issues. 	<p>IB3</p> <p>IS14</p> <p>N/A</p> <p>N/A⁷⁷</p> <p>IB2</p>

⁷⁷ For most pension schemes this will be considered at trustee board level (i.e. under a(i)), although schemes which have individuals/organisations providing executive support to the Trustees may wish to consider disclosure b(iii) separately.

Strategy		
Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material.		
Recommended Disclosure a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long-term.	Guidance for All Sectors Organisations should provide the following information: i. a description of what they consider to be the relevant short-, medium-, and long-term horizons, taking into consideration the useful life of the organisation's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms, ii. specific climate-related issues for each time horizon (short, medium, and long-term) that could have a material financial impact on the organisation and distinguish whether the climate-related risks are transition or physical risks, and iii. a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organisation. iv. Organisations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate.	IS4 DB1 IS5 IS9 DB1 IS2 DB1
Recommended Disclosure b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	Guidance for All Sectors i. Building on recommended disclosure (a), organisations should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning. Organisations should consider including the impact on their businesses and strategy in the following areas: - Products and services - Supply chain and/or value chain - Adaptation and mitigation activities - Investment in research and development - Operations (including types of operations and location of facilities)	IS10 IS12 IS13
	ii. Organisations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritised. Organisations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time. Organisations should also consider including in their disclosures the impact on financial planning in the following areas: - Operating costs and revenues - Capital expenditures and capital allocation - Acquisitions or divestments - Access to capital	IS3 DB2

	<p>Supplemental Guidance for Asset Owners</p>	
	<p>iii. If climate-related scenarios were used to inform the organisation's strategy and financial planning, such scenarios should be described.</p> <p>iv. Asset owners should describe how climate-related risks and opportunities are factored into relevant investment strategies. This could be described from the perspective of the total fund or investment strategy or individual investment strategies for various asset classes.</p>	<p>IS10 IS11 IS3 IS10</p>
<p>Recommended Disclosure c)</p> <p>Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.</p>	<p>Guidance for All Sectors</p> <p>i. Organisations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a lower-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organisation, scenarios consistent with increased physical climate-related risks.</p> <p>Organisations should consider discussing:</p> <ul style="list-style-type: none"> - where they believe their strategies may be affected by climate-related risks and opportunities; - how their strategies might change to address such potential risks and opportunities; and - the climate-related scenarios and associated time horizon(s) considered. <p>Refer to Section D in the Task Force's report for information on applying scenarios to forward-looking analysis.</p> <p>Supplemental Guidance for Asset Owners</p> <p>ii. Asset owners that perform scenario analysis should consider providing a discussion of how climate-related scenarios are used, such as to inform investments in specific assets.</p>	<p>IS6 IS12 DB1</p> <p>IS11</p>

Risk Management Disclose how the organisation identifies, assesses, and manages climate-related risks.		
<p>Recommended Disclosure a)</p> <p>Describe the organisation's processes for identifying and assessing climate-related risks.</p>	<p>Guidance for All Sectors</p> <ul style="list-style-type: none"> i. Organisations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organisations determine the relative significance of climate-related risks in relation to other risks. ii. Organisations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered. iii. Organisations should also consider disclosing the following: <ul style="list-style-type: none"> - processes for assessing the potential size and scope of identified climate-related risks and - definitions of risk terminology used or references to existing risk classification frameworks used. <p>Supplemental Guidance for Asset Owners</p> <ul style="list-style-type: none"> iv. Asset owners should describe, where appropriate, engagement activity with investee companies to encourage better disclosure and practices related to climate-related risks to improve data availability and asset owners' ability to assess climate-related risks. 	<p>IS2</p> <p>IS2</p> <p>IS2</p> <p>DB1</p> <p>St1</p>
<p>Recommended Disclosure b)</p> <p>Describe the organisation's processes for managing climate-related risks.</p>	<p>Guidance for All Sectors</p> <ul style="list-style-type: none"> i. Organisations should describe their processes for managing climate-related risks⁷⁸, including how they make decisions to mitigate, transfer, accept, or control those risks. ii. In addition, organisations should describe their processes for prioritising climate-related risks, including how materiality determinations are made within their organisations. <p>Supplemental Guidance for Asset Owners</p> <ul style="list-style-type: none"> iii. Asset owners should describe how they consider the positioning of their total portfolio with respect to the transition to a lower-carbon energy supply, production, and use. <p>This could include explaining how asset owners actively manage their portfolios' positioning in relation to this transition.</p>	<p>IS7</p> <p>DB2</p> <p>IS7</p> <p>DB1</p> <p>IS12</p> <p>IS17</p>
<p>Recommended Disclosure c)</p> <p>Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.</p>	<p>Guidance for All Sectors</p> <ul style="list-style-type: none"> i. Organisations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management. 	<p>IS7</p> <p>DB1</p>

⁷⁸ In describing their processes for managing climate-related risks, organisations should address the risks included in Tables A1 and A2 (pp. 72-73), as appropriate.

Metrics and Targets

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

<p>Recommended Disclosure a)</p> <p>Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.</p>	<p>Guidance for All Sectors</p> <ul style="list-style-type: none"> i. Organisations should provide the key metrics used to measure and manage climate-related risks and opportunities.⁷⁹ ii. Organisations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable. iii. Where climate-related issues are material, organisations should consider describing whether and how related performance metrics are incorporated into remuneration policies. iv. Where relevant, organisations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a lower-carbon economy. v. Metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organisations should provide a description of the methodologies used to calculate or estimate climate-related metrics. 	<p>M</p>
	<p>Supplemental Guidance for Asset Owners</p> <ul style="list-style-type: none"> vi. Asset owners should describe metrics used to assess climate-related risks and opportunities in each fund or investment strategy. Where relevant, asset owners should also describe how these metrics have changed over time. vii. Where appropriate, asset owners should provide metrics considered in investment decisions and monitoring. 	<p>M</p>

⁷⁹ as described in Tables A1 and A2 (pp. 72-73).

<p>Recommended Disclosure b)</p> <p>Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.⁸⁰</p>	<p>Guidance for All Sectors</p> <ul style="list-style-type: none"> i. Organisations should provide their Scope 1 and Scope 2 GHG emissions and, if appropriate, Scope 3 GHG emissions and the related risks.⁸¹ ii. GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organisations and jurisdictions.⁸² As appropriate, organisations should consider providing related, generally accepted industry-specific GHG efficiency ratios.⁸³ iii. GHG emissions and associated metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organisations should provide a description of the methodologies used to calculate or estimate the metrics. 	
	<p>Supplemental Guidance for Asset Owners</p> <ul style="list-style-type: none"> iv. Asset owners should provide the weighted average carbon intensity, where data are available or can be reasonably estimated, for each fund or investment strategy. v. In addition, asset owners should provide other metrics they believe are useful for decision-making along with a description of the methodology used.⁸⁴ <p>Note: The Task Force acknowledges the challenges and limitations of current carbon footprinting metrics, including that such metrics should not necessarily be interpreted as risk metrics. The Task Force views the reporting of weighted average carbon intensity as a first step and expects disclosure of this information to prompt important advancements in the development of decision-useful, climate-related risk metrics. The Task Force recognises that some asset owners may be able to report weighted average carbon intensity for only a portion of their investments given data availability and methodological issues.</p>	<p>IS16</p> <p>M</p>

⁸⁰ Scope 1 GHG emissions are direct emissions from sources that are owned or controlled by an entity. Scope 2 GHG emissions are indirect emissions from sources that are owned or controlled by an entity (e.g. electricity, heat, or steam purchased from a utility provider). Scope 3 GHG emissions are from sources not owned or directly controlled by an entity but related to the entity's activities (e.g. employee commutes).

⁸¹ Emissions are a prime driver of rising global temperatures and, as such, are a key focal point of policy, regulatory, market, and technology responses to limit climate change. As a result, organisations with significant emissions are likely to be more strongly impacted by transition risk than other organisations. In addition, current or future constraints on emissions, either directly in emission restrictions or indirectly through carbon budgets, may impact organisations financially.

⁸² While challenges remain, the GHG Protocol methodology is the most widely recognised and used international standard for calculating GHG emissions. Organisations may use national reporting methodologies if they are consistent with the GHG Protocol methodology

⁸³ For industries with high energy consumption, metrics related to emission intensity are important to provide. For example, emissions per unit of economic output (e.g., unit of production, number of employees, or value-added) is widely used.

⁸⁴ See Table 2 (p. 43) for common carbon footprinting and exposure metrics, including weighted average carbon intensity.

<p>Recommended Disclosure c)</p> <p>Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.</p>	<p>Guidance for All Sectors</p> <ul style="list-style-type: none"> i. Organisations should describe their key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc., in line with anticipated regulatory requirements or market constraints or other goals. Other goals may include efficiency or financial goals, financial loss tolerances, avoided GHG emissions through the entire product life cycle, or net revenue goals for products and services designed for a lower-carbon economy. ii. In describing their targets, organisations should consider including the following: <ul style="list-style-type: none"> - whether the target is absolute or intensity based, - time frames over which the target applies, - base year from which progress is measured, and - key performance indicators used to assess progress against targets. iii. Where not apparent, organisations should provide a description of the methodologies used to calculate targets and measures. 	<p>IS17</p> <p>M</p>
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Appendix 2 - Enquiries to make of asset managers

Trustees should be careful to ensure that the products and services they buy are genuinely managing climate risk. They need to be able to identify and avoid greenwash.

They should not be afraid to dig deeper, keep asking questions and challenge what they hear. They should also be willing to move the discussion onto their own territory. How do the managers' strategies and outcomes reflect the trustees' own investment beliefs, stewardship and investment policies? Rather than allow fund managers to pick their own case studies, what engagement and voting do they carry out in relation to the firms chosen by the trustees.

In line with their fiduciary duty, trustees should rigorously assess the capabilities and approach to climate management of new and existing managers on the factors below, structured in line with the TCFD recommendations.

Governance

1. Has the manager produced a TCFD report which outlines their governance of climate-related issues?
2. If not, is there clear evidence that governance structures and responsibilities are in place/have been updated to ensure appropriate oversight of climate-related risks and opportunities?

Strategy

Integration into the investment process:

3. Does the manager integrate climate-related risks into their investment process i.e. valuation and construction process?
4. Does the manager undertake climate-related scenario analysis as part of their investment process? If not, are they willing to undertake such an exercise?
5. How does the manager perform in league tables that compare managers' approach to climate change (e.g. <https://aodproject.net/managers/>)
6. Is the manager a signatory to the Stewardship Code?
7. Is the manager a PRI signatory? Does their PRI Reporting include voluntary information, as well as mandatory information? Do they provide private transparency reports on request?

Engagement and voting:

8. Are your rights to hold companies to account exercised?

9. How does the manager vote per region?
10. How often do they vote against company resolutions?
11. In what circumstances – and how often – do they vote against (re)appointments of chairs on climate grounds?
12. Do they propose their own shareholder resolutions?
13. Do they support shareholder resolutions on climate change?
14. Are they transparent regarding their voting activity?
15. Does the manager have custom voting policies?
16. Is their voting materially different from large proxy voting providers?
17. What is the manager's escalation policy when engagement is unsuccessful? Can they give an example of when they have escalated, how they did so, their rationale for doing so, and the outcome?
18. How do they manage internal conflicts of interest?
19. Who internally decides on the way in which the asset manager votes?
20. Does the manager abstain from voting?
21. Do your managers speak for your beneficiaries?
22. Is the manager a member of and actively involved in key selected climate-related initiatives (such as PRI, CDP, CA 100+)?
23. Does the manager have examples and successes from leading collective engagement?

Client education

24. Does the manager seek to understand client needs and views on climate?
25. Are managers able to demonstrate how they are helping their clients, and ultimate beneficiaries, to act on climate change?
26. How does the manager inform their clients about the future risks and opportunities that are not fully recognised by the market?
27. How does the manager communicate the impact they have had to their clients?
28. Is the reporting detailed, standardised, and cover the whole of the portfolio?
29. Are they articulating the 'value add' of their engagement on climate change?
30. Can the manager share worked examples of the impact they have had?

Public policy

31. Does the manager push for and support progressive public policy initiatives on climate change, e.g. decarbonisation of transport, agriculture?
32. Does the manager challenge companies that fund anti-climate lobbying through affiliates and trade associations?

- 33. Does the manager push for better standards in regulation, listing rules and other oversight?
- 34. Does the manager collaborate with others to promote continued improvement of the financial markets?

Product development

- 35. Does the manager have a comprehensive low-carbon offering across asset classes? Do they offer a bespoke service for clients?
- 36. Is the manager's approach to product development and low-carbon offerings aligned with its broader climate strategy/approach?

Risk Management

Macro-economic and thematic research

- 37. Does the manager undertake top-down research and analysis related to climate-related risks?
- 38. Does the manager demonstrate that the implications of climate-related risks are considered across different asset classes and investment strategies?
- 39. Does the manager demonstrate that this feeds into considerations of sector analysis and asset allocation?
- 40. Has the manager estimated the potential risk of assets becoming stranded in a 2°C climate scenario? If not, are they willing to undertake this exercise?
- 41. Is climate-related risk considered in the assessment of sovereigns?

Micro-economic/company research

- 42. Does the manager demonstrate how top-down and bottom-up analysis of climate-related risks are integrated into investment decision-making, including fundamental analysis (active) and index strategies (passive)?
- 43. Does the manager measure the carbon footprint, including reserves, of its portfolios? Have they clearly reported this on an annual basis?
- 44. Has the manager considered the risks of physical impacts of climate change on the portfolio?
- 45. Do they know, and disclose, the exposure to fossil fuel assets? ✓✓

ESG engagement for all clients and markets

- 46. Is the manager able to demonstrate how engagement activities are linked up to the consideration of climate-related risks within investment analysis/portfolios?
- 47. Is the asset manager able to demonstrate engagement in assets other than UK-listed equity?
- 48. Are there any other activities or initiatives that the manager is involved in to mitigate the risk of climate change?

Metrics & Targets

- 49. Does the manager report climate change data annually?
- 50. Has the manager put in place targets and ambitions in areas in which it can be accountable?
- 51. Is the manager a PRI member? Does their PRI Reporting include voluntary information, as well as mandatory information? Do they provide private transparency reports on request?

Appendix 3 - PRA's Life Insurance Stress Test

The table below is taken from table 1 of the PRA's Life Insurance Stress Test 2019: Scenario Specification, Guidelines and Instructions. Two data-driven sets of hypothetical narratives, closely resembling those set out in Chapter 10, are presented, including a set of assumptions designed to help quantify the impacts on firm equity valuations in different sectors using simple metrics.

The shocks themselves are applied at time points in the future, but the shock parameters in the tables below are to be applied to the current equity price. The impact on corporate bonds can be calculated by applying a flat multiplier of 15% compared to the impact on equities (so that the impact on corporate bonds equals 0.15 times the impact on equities).

	Orderly transition	Abrupt transition in 2022
Fuel extraction		
Coal	-40%	-45%
Oil	-38%	-42%
Gas	-15%	-25%
Power generation		
Coal	-55%	-65%
Oil	-30%	-35%
Gas	-15%	-20%
Renewables (incl. nuclear)	+20%	+10%
Transport		
Automotive non EV	-10%	-30%
Automotive EV	+50%	+15%
Marine (incl. assets like ports)	-10%	-15%
Aviation (incl. assets like airports)	-18%	-21%
Energy intensive industries (materials/metals)		
Manufacture and first-order processing of coke, chemicals, cement, iron and related alloys	-25%	-35%
Other manufacturing	-10%	-15%

Agriculture and Food Security		
Agriculture, forestry, fishing, dairy cattle, food logistics and retail	-50%	-65%
Transporting/trading/supplying products based on food (e.g. super-market chains.)	-10%	-15%
Real Estate Assets (incl. CRE, rental and leasing, construction, infrastructure)		
Global Average (incl. other regions)		-10%
North America		-10%
Europe		-5%
Asia and Pacific		-20%

Appendix 4 - Further reading/links

Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD):

Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures (June 2017) - <https://www.fsb-tcfd.org/publications/final-recommendations-report/>

Annex: Implementing the Recommendations of the TCFD (June 2017) - <https://www.fsb-tcfd.org/publications/final-implementing-tcfd-recommendations/>

Technical Supplement: The Use of Scenario Analysis in Disclosure of Climate-related Risks and Opportunities (June 2017) - <https://www.fsb-tcfd.org/publications/final-technical-supplement/>

TCFD: 2019 Status Report (June 2019) - <https://www.fsb-tcfd.org/publications/tcfd-2019-status-report/>

TCFD Knowledge Hub - <https://www.tcfdhub.org/>

Principles for Responsible Investment (PRI):

TCFD-based reporting to become mandatory for PRI signatories in 2020 (February 2019) - <https://www.unpri.org/news-and-press/tcfd-based-reporting-to-become-mandatory-for-pri-signatories-in-2020/4116.article>

Implementing the TCFD recommendations: a guide for asset owners (May 2018) - <https://www.unpri.org/climate-change/an-asset-owners-guide-to-the-tcfd-recommendations/3109.article>

Preparing investors for the Inevitable Policy Response to climate change (September 2019) - <https://www.unpri.org/esg-issues/environmental-issues/climate-change/inevitable-policy-response>

PRI Reporting Framework 2019: Strategy and Governance (Climate-related indicators only) (July 2019) - https://d8g8t13e9vf2o.cloudfront.net/Uploads/o/k/j/03.climatechangereportingsgcc2019_432791.pdf

see also: Climate-related disclosure - <https://www.unpri.org/climate-change/climate-related-disclosure-/3971.article>

Climate Disclosure Standards Board (CDSB):

TCFD Implementation Guide (May 2019) - <https://www.cdsb.net/tcfd-implementation-guide>

TCFD Good Practice Handbook (September 2019) - <https://www.cdsb.net/tcfd-good-practice-handbook>

Institutional Investors Group on Climate Change (IIGCC):

Addressing climate-related risks and opportunities in the investment process: a practical guide for trustees and boards of asset owner organisations (November 2018) - <https://www.iigcc.org/resource/addressing-climate-related-risks-and-opportunities-in-the-investment-process/>

Navigating climate scenario analysis – a guide for institutional investors (February 2019) - <https://www.iigcc.org/resource/navigating-climate-scenario-analysis-a-guide-for-institutional-investors/>

See also various sector level reports (utilities, oil and gas, property and construction, industrials manufacturing and materials) that examine the climate-related risks and opportunities from an investor perspective in the transition to a 2°C or less outcome - <https://www.iigcc.org/resources/>

Institute and Faculty of Actuaries (IFoA):

Climate Change for Actuaries: An Introduction (March 2019)

R&E Issues: A Practical Guide for Defined Benefit Pensions Actuaries (April 2017)

Climate Risk: A Practical Guide for Actuaries working in Defined Contribution Pensions (March 2018)

All available at: <https://www.actuaries.org.uk/practice-areas/resource-and-environment/resource-and-environment-practice-area-practical-guides>

Miscellaneous:

HM Government: Green Finance Strategy – Transforming Finance for a Greener Future (July 2019) - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf

House of Commons Environmental Audit Committee (EAC): Greening Finance: embedding sustainability in financial decision making: Seventh Report of Session 2017-2019 (May 2018) - <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1063/1063.pdf>

Bank of England Supervisory Statement 3/19: Enhancing banks' and insurers' approaches to managing the financial risks from climate change (April 2019) - <https://www.bankofengland.co.uk/prudential-regulation/publication/2019/enhancing-banks-and-insurers-approaches-to-managing-the-financial-risks-from-climate-change-ss>

The 2° Investing Initiative: Assessing the Alignment of Portfolios with Climate Goals (October 2015) - <https://2degrees-investing.org/>

Accounting for Sustainability Project (A4S): Supporting the TCFD Recommendations - <https://www.accountingforsustainability.org/en/activities/tcf.html>

AODP Winning Climate Strategies: Practical Solutions and Building Blocks for Asset Owners from Beginner to Best Practice (2018) - <https://aodproject.net/>

Aon, Climate change challenges: Climate change scenarios and their impact on funding risk and asset allocation (2018) - www.aon.com/getmedia/8ddb2a56-c1a9-4689-81e6-f3b7c178e57c/Climate-Change-Challenges.aspx

Aon, Climate change challenges: Some case studies (2018) - www.aon.com/getmedia/e8648ded-3146-4a81-9887-65a02d8f49fe/Climate-Change-Challenges-Case-Studies.aspx

Australian Centre for Policy Development, Climate Horizons Report: Scenarios and strategies for managing climate risk (2018) - <https://cpd.org.au/wp-content/uploads/2018/06/Climate-Horizons-report-2018.pdf>

Cambridge Institute for Sustainability Leadership, Unhedgeable risk: How climate change sentiment impacts investment (November 2015) - <https://www.cisl.cam.ac.uk/resources/sustainable-finance-publications/unhedgeable-risk>

CICERO, Climate Scenarios demystified: A climate scenario guide for investors - <https://cicero.oslo.no/en/publications/internal/2867>

Club Vita, Hot and Bothered? Climate change and resource constraint scenarios affecting UK longevity (July 2018) - <https://www.clubvita.co.uk/collaborative-research/hot-and-bothered>

ClientEarth and Sustineri – Report on market standards on climate-related risks by asset owners (August 2018) - <https://www.documents.clientearth.org/library/download-info/market-standards-on-climate-related-risks-by-asset-owners-report-by-clientearth-and-sustineri/>

LCP, A guide to climate-related risks: Climate change and the implications for pension schemes (August 2017) - <https://insight.lcp.uk/acton/attachment/20628/f-060a/1/-/-/-/LCP%20guide%20to%20climate%20risk%20for%20pension%20schemes.pdf>

Local Authority Pension Fund Forum: Climate Change Investment Policy Framework (2017) - [http://www.lapfforum.org/wp-content/members-folder2017/member-resources/2017 Climate change investment policy framework implementation.pdf](http://www.lapfforum.org/wp-content/members-folder2017/member-resources/2017%20Climate%20change%20investment%20policy%20framework%20implementation.pdf)

Mercer, Investing in a Time of Climate Change, the Sequel (2019) - <https://www.mercer.com/our-thinking/wealth/climate-change-the-sequel.html>

Pensions and Lifetime Savings Association (PLSA) - ESG & Stewardship: A Practical Guide to Trustee Duties - <https://www.plsa.co.uk/Policy-and-Research/Document-library/Responsible-Investment-Guide-2019>

Pensions and Lifetime Savings Association (PLSA) – “More Light Less Heat” report (December 2017) - <https://www.plsa.co.uk/Policy-and-Research/Document-library/More-light-less-heat>

Pensions and Lifetime Savings Association (PLSA) – Stewardship Guidance and Voting Guidelines 2020 (February 2020) – includes a section specifically on climate stewardship and good corporate behaviour <https://www.plsa.co.uk/Policy-and-Research/Document-library/PLSA-Stewardship-Guide-and-Voting-Guidelines-2020>

The Pensions Policy Institute - ESG: past, present and future (October 2018) - <https://www.pensionspolicyinstitute.org.uk/research/research-reports/2018/2018-10-02-ppi-esg-past-present-and-future/>

Schroders, Climate Progress Dashboard – navigating risks and opportunities - <https://www.schroders.com/en/us/institutional/insights/climate-progress-dashboard/>

Smith School of Enterprise and the Environment (SSEE) - Investment consultants and green investment: risking stranded advice? Working Paper (August 2015) <https://www.smithschool.ox.ac.uk/research/sustainable-finance/publications/wp-investment-consultants.pdf>

The Transition Pathway Initiative (TPI): How can investors use the TPI? (January 2017) - <http://www.lse.ac.uk/GranthamInstitute/tpi/wp-content/uploads/2017/01/Using-TPI.pdf>

The Transition Pathway Initiative (TPI): TPI State of Transition Report (2019) - <http://www.lse.ac.uk/GranthamInstitute/tpi/wp-content/uploads/2019/07/TPI-State-of-Transition-Report-2019-1.pdf>

UK Sustainable Investment and Finance Association (UKSIF): A Checklist for Pension Trustees - <https://uksif.org/resources/a-checklist-for-pension-trustees/>

United Nations Environment Programme Finance Initiative (UNEP FI): “Changing Course” A comprehensive investor guide to scenario-based methods for climate-related risks assessment, in response to the TCFD (May 2019) - <https://www.unepfi.org/wordpress/wp-content/uploads/2019/05/TCFD-Changing-Course-Oct-19.pdf>

WWF Climate Guide for Asset Owners: Aligning Investment Portfolios with the Paris Agreement (December 2017) - <https://www.wwf.org.uk/updates/climate-guide-asset-owners-aligning-investment-portfolios-paris-agreement>