FCA Climate Change Adaptation Report

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1 Foreword

Welcome to our first Climate Change Adaptation Report. I am new to the FCA and cannot take credit for the comprehensive work taking place and the dedication of the teams involved. I joined the FCA as the impact that the regulator can have in so many varied areas can help promote financial innovation and improve market integrity through better disclosure. We can create confidence among end consumers that the regulatory system will help to protect them.

Embedding climate and environmental issues across the FCA, including on climate adaptation and the transition to a net zero economy, is a key objective. We are developing our ESG expertise as part of this and will be asking probing questions to get answers on these important topics.

Climate change is a significant concern to consumers who are wanting to do their bit to solve the crisis. They need clear, consistent information and new innovative solutions, as well as active stewardship, to achieve their aims.

These are relatively early days in our work and, although much work is being done, we will be increasing our focus on joining up the FCA on climate adaptation and promoting internationally consistent climate standards. We are working closely with the other financial regulators who are also reporting today to solve such a serious global issue.

Thank you and I hope you enjoy the report.

Sacha Sadan, Director of ESG

2 Executive summary

2.1 In this report, we set out our assessment of how the financial services industry and listed companies are adapting to climate change. We have set this in a broader context: how we as an organisation are developing our strategic approach to climate-related issues, and how we see firms and markets evolving to meet new demands and challenges, and transition to net zero.

2.2 The challenges of climate change involve all 3 of our statutory objectives, and we recognise the risks of harm to each. On consumer protection, we want to ensure that consumers are able to access green products and services that fit with their needs and preferences. Providers must ensure that such products and services work as expected, and consumers are not misled. 'Greenwashing' is a material risk. We expect all firms offering green products and services to ensure that their design and delivery match their marketing and reasonable expectation of consumers.

2.3 Transparency is also a key mechanism to maintain market integrity. All investors need good disclosures in order to inform their decisions and manage climate-related risks and opportunities. This supports effective price formation in the markets and the efficient allocation of capital. And the markets need to evolve to ensure climate-related risks can be managed effectively.

2.4 In terms of effective competition in the interests of consumers, innovation helps ensure that consumers needs and preferences can be met as we move towards a more sustainable future, and will drive competition to develop more sustainable solutions. Transparency supports this, helping consumers be clear about their choices.

2.5 The letter we received from the Chancellor of the Exchequer in March this year underlined the importance of climate issues to our work. In that letter, the Chancellor stated that we should 'have regard to the government's commitment to achieve a net-zero economy by 2050… when considering how to advance [our] objectives and discharge [our] functions.'

2.6 Reflecting this, our 2021/22 Business Plan set out a series of outcomes we want to achieve for Environmental, Social and Governance (ESG) issues. Transparency, trust and integrity figure significantly. We have also appointed a new Director of ESG, who reports directly to our CEO, with a mandate to embed ESG considerations across our organisation. To help achieve these outcomes, we are refreshing our ESG strategy, which we will publish this autumn. This will expand on our previous strategy which centred on Transparency, Trust and Tools and will bring in two new 'Ts' - Transition and Team:

- **Transparency:** Promoting good and consistent disclosures along the investment chain.
- **Trust**: Ensuring that the market delivers sustainable finance instruments and products that genuinely meet investors' sustainability preferences – and are seen to do so.
- **Tools:** Government, regulators and industry working collaboratively to share experience, develop consistent guidance and tools and provide mutual support as we confront the challenges of climate change.

- **Transition:** Developing our role in supporting a market-led transition to a more sustainable future.
- **Team:** Embedding climate and other sustainability considerations within the way we function as an organisation.

2.7 This is an ambitious strategy and it requires urgent action. This report discusses the steps we are taking and includes a timeline in this Executive Summary that sets out our major publications between now and next summer. This includes the publication of our final rules on disclosures aligned with the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations for standard listed issuers, asset managers, life insurers and FCA-regulated pension funds. It also includes our work on the Sustainability Disclosure Requirements and product labelling.

2.8 We are embedding ESG considerations across everything we do as an organisation with an aim to effect faster change. This includes our supervisory practices and our authorisations processes. We will build on our existing work, engaging with firms on greenwashing and our climate-related disclosure rules, as well as increasing our engagement on issues such as how they are managing climate risks and plans for transitioning to net zero.

2.9 We are also using Innovation tools. The latest cohort of the Digital Sandbox Pilot is focused on sustainability and climate change, and we have worked with the City of London Corporation and industry to develop a set of use cases. These centre on ESG data and disclosures, and we will be working with successful applicants from November to support their development of solutions. We are also running a further Green FinTech Challenge, focused on new products and services to speed the transition to a net zero economy.

2.10 We also discuss the industry's efforts to adapt to climate change and transition to net zero. In this report we have considered the main financial risks and harms, including insurance underwriting risk, credit risk, financial market risk and operational risk. And we have set out the steps we have seen the industry take to mitigate these across a range of sectors.

2.11 In addition, we set out in this report our view on how the industry is transitioning to net zero and how capital is being mobilised to tackle climate change.

2.12 We see growing commitment to net zero pledges. The membership of net zero alliances is expanding across the ecosystem of asset owners, asset managers, banks and insurance companies. We are keen to see firms' commitments backed up by appropriate governance and the adoption of coherent transition plans, supported by targets and metrics that allow firms and others to monitor progress. This will be vital if the Government's target of achieving net zero by 2050 is to be achieved, and we will be working with the industry and other stakeholders to progress this.

2.13 In terms of capital mobilisation, the scale of the challenge to decarbonise the economy is huge. The UK's capital markets are large and sophisticated. They can assist with the extensive investment that is required. But we identify a range of challenges that mean capital may not be allocated efficiently and the impacts this can have on different stakeholders, including retail investors and pension funds. We, other regulators, and the Government are taking steps to address these challenges and remove barriers along the investment chain. The financial services industry and listed companies have a vital role to play in ensuring the markets deliver the information, market structures and liquidity that is needed to achieve net zero.

Figure 1: Timeline of upcoming FCA ESG publications

November 2021

COP26
We will be participating in a number of events at COP26 on 3 November, and launching our refreshed strategy and Discussion Paper outlined below.

Refreshed ESG Strategy
Spanning E, S and G, our refreshed Strategy will elaborate further on the 5 Ts (Transparency, Trust, Tools, Transition and Team).

Discussion Paper on Sustainability Disclosure Regime and product labels
We will be asking for feedback on a number of matters relating to the proposed SDR and sustainable product labels.

December 2021

TCFD Policy Statements
We will be publishing the final rules for TCFD-aligned disclosures for a wider scope of listed issuers and for asset managers, life insurers and FCA-regulated pension providers.

H1 2022

Feedback Statement on ESG and Capital Markets
We will publish our response to the feedback we received to our discussion on ESG and Capital Markets in CP21/18.

H1 2022

Net zero stakeholder engagement
We will engage with stakeholders on promoting well-designed, well-governed, credible and effective transition plans.

Spring 2022

Feedback Statement and Consultation Paper on Sustainability Disclosure Regime and product labels
Following the Discussion Paper in November, we will publish our response to the feedback we receive and consult on the resulting proposals.

Summer 2022

FCA TCFD Report
We will publish our first TCFD-aligned report considering the FCA as an operating entity and as a regulator, alongside our Annual Report.

3 Overview of the FCA's climate change strategy

What this Report does

3.1 Domestic and international policymakers – and a broad range of stakeholders from across society and the industry – are committed to the climate agenda. The pandemic has underlined social considerations in policy making, and the Government has committed to actively focusing on a cleaner, greener and more inclusive economic recovery. The financial sector is key in adapting to and mitigating the effects of climate change and, with the UK hosting this year's UN Climate Change Conference (COP26), momentum is building in the financial sector towards a net zero economy by 2050.

3.2 This affects us in our role as a securities, conduct and prudential regulator. We originally set out the scope of our interest in climate change issues in October 2019 in our Feedback Statement on climate change and green finance (FS19/6), in which we framed our overarching aim as being to:

'…ensure our regulatory approach creates an environment where market participants can adequately manage the risks from moving to a low carbon economy and are able to capture the opportunities to benefit consumers. More broadly, we want to help… accelerate the transition to a net-zero emissions economy…'.

3.3 The importance of climate change and the transition to a net zero economy in our work has been expanded and reinforced by the remit letter we received from the Chancellor in March this year. The remit letter states that we should 'have regard' to climate change considerations in advancing our objectives. Specifically, we should 'have regard to the government's commitment to achieve a net-zero economy by 2050… when considering how to advance [our] objectives and discharge [our] functions.' This has been reflected in our Business Plan for 2021/22, which includes Environmental, Social and Governance (ESG) as a priority across the markets we regulate.

3.4 Our CEO, Nikhil Rathi, has committed us to taking a lead policymaking role on climate change, issues of sustainability and good governance, publicly emphasising our role in facilitating the transition to net zero. The new 'have regard' discussed above has brought this squarely within our remit and underlined its relevance to our operational objectives. ESG is an FCA Board priority and, to drive our ESG agenda forward, we have appointed a new Director of ESG, Sacha Sadan. We are also dedicating increased resource across the FCA to embed ESG throughout our functions. We discuss our plans for expanding and embedding net zero considerations and wider ESG concerns in our senior leadership, organisational structure and governance processes in Chapter 7 of this report.

3.5 We consider transparency across the financial chain to be a key ingredient in adapting to climate change and in transitioning to net zero. So we welcomed the Department for Environment, Food & Rural Affairs (DEFRA) asking us - and other financial services regulators - to report this year on how we and the financial services industry are adapting to climate change, as part of its third round of climate change adaptation reporting.

3.6 Adaptation reporting is about how an organisation is changing its strategy or activity in response to the impacts of climate change, rather than about mitigating the risks of climate change itself (eg by taking steps to transition to a lower carbon economy). However, the line between these two is sometimes blurred, and adaptation activity often goes hand in hand with mitigation activity. This is particularly the case in the financial services sector. For example, an asset manager including investments in renewable energy in its portfolio can help make the portfolio more resilient against the impacts of climate change (adaptation) but also the investment itself may help reduce global emissions (mitigation).

3.7 It is increasingly important to consider adaptation and mitigation together when we think about our climate change strategy. In June 2021, the Climate Change Committee, which advises the UK Government on reducing emissions, published its Independent Assessment of UK Climate Risk and advised that *'The best way to address climate change and to avoid unintended consequences is to ensure adaptation and mitigation are considered together in those areas where there are the major interactions: especially across policies for infrastructure, buildings and the natural environment.'*

3.8 The firms we regulate provide the financing and other products that support the real economy. They have a huge role to play in directing the flow of capital to enable both climate adaptation activities and the transition to a net zero economy. As a financial services regulator, we want to encourage firms to consider adaptation and mitigation together by doing so in our own strategy. This will lead to a more holistic and effective approach to tackling climate change.

3.9 The other financial regulators – the Prudential Regulation Authority (PRA), The Pensions Regulator (TPR), and the Financial Reporting Council (FRC) – have also been asked to produce Climate Change Adaptation Reports this year. We have been coordinating our approaches so that we have consistent messaging for our regulated communities. One of our aims more generally is to adopt a collaborative approach across regulators in our approach to climate issues. This includes using common language and standards so that we are more joined up and create shared understanding. Such collaboration is itself a key climate adaptation tool.

3.10 So this report sets out the actions we and the financial services industry have taken to adapt to the challenges of climate change. We set this within the context of our strategic approach to climate change more widely, including the transition to net zero by 2050. As a result, the report discusses:

- key themes of the FCA's climate change strategy so far
- how firms are addressing and adapting to climate-related risks and opportunities
- how firms are planning to transition to net zero
- the role of capital mobilisation in financing both climate change adaptation and climate change mitigation, and
- how our climate change – and wider sustainability – strategy is evolving

3.11 While the report has not been published for consultation, we welcome stakeholders' comments, and their engagement on climate matters generally. This is a fast-moving and important topic and we want to learn from your feedback. Please send any comments to CAR-Feedback@fca.org.uk.

Climate change through the lens of our objectives

3.12 Climate change is a unique regulatory challenge – a cross-cutting issue that has an impact on all market participants and on all of our stakeholders. So it is inevitable that it has ramifications for all 3 of the FCA's operational objectives, which are to:

- secure an appropriate degree of protection for consumers
- protect and enhance the integrity of the UK financial system
- promote effective competition in the interests of consumers

3.13 To address these impacts, we need support from senior leadership in financial firms and listed issuers. Change must come from across firms' and issuers' functions, not just from dedicated ESG teams, if we are to achieve our goals,

Consumer protection

3.14 As we adapt to the challenges of climate change and the transition to a net zero economy, we want to make sure that consumers have access to green products and services that meet their needs and preferences. This is a rapidly evolving space and there is a risk of 'greenwashing', where products are made to appear more 'green' than they actually are. Greenwashing is often a matter of perception rather than an 'absolute'. Certain terms used by the industry can cause problems by creating false expectations for consumers.

3.15 There is also a broader risk of financial loss for consumers where firms do not sufficiently consider climate risk. For instance, if firms do not integrate climate risk in their investment strategies, underlying investors may be exposed to losses from the physical effects of climate change on asset value. Similarly, as public policy rapidly evolves to adapt to climate change, consumers may lose money or access to products where firms fail to respond to the evolving policy environment. We seek to protect consumers and make sure they are getting a fair deal as the physical effects of climate change crystallise and firms evolve their businesses. Risk reporting is vital to ensure that all stakeholders have information to make informed decisions. We explore climate change risks in Chapter 4 of this report.

Market integrity

3.16 As our economy adapts and transitions, it is important that we maintain the integrity of our financial markets. This is key as they respond to the risks and deliver a transition in a smooth and orderly way. This will promote trust in the adaptation and transition processes among investors and consumers.

3.17 Transparency is an important mechanism supporting market integrity. Climate-related disclosures will enable all investors to make decisions that take climate risks and opportunities into account, including reflecting the impacts in asset prices. We want to promote globally consistent standards. So we have introduced, or are introducing, disclosure requirements for key listed companies and regulated firms that are aligned with the Task Force on Climate-Related Financial Disclosures' (TCFD) recommendations. We discuss in our chapter on capital mobilisation (Chapter 6) how we are implementing these requirements to support the Government's commitment to mandatory TCFD-aligned disclosures.

3.18 Transparency is not the only consideration to support market integrity. We must maintain and evolve the underlying ecosystem and frameworks that allow market participants to adapt to climate change and support the transition to net zero. For example, it is important that secondary markets adapt to allow firms to manage the impact of climate risks and that the necessary liquidity is maintained to support fair and efficient markets.

Effective competition in the interest of consumers

3.19 Effective competition can drive growth, innovation and improved standards, and this can lead to benefits for consumers. Consumers are deeply interested in ESG issues, and so high-quality, consistent information is important in promoting competition, as it enables effective consumer choice. This will in turn encourage firms to be proactive in incorporating climate risks and opportunities in their business models.

3.20 Setting domestic and international standards on climate disclosures is a key part of this. We are working closely with other regulators to deliver consistent standards in the UK and globally. And we are also liaising with the Competition and Markets Authority to ensure the right framework is in place to facilitate firms competing effectively in the climate space.

3.21 Aligned with this, we are keen to promote positive innovation in green finance. We support firms that are seeking new ways to mitigate climate risk and enable consumers to take advantage of the opportunities that the transition to net zero offers. This will in turn support effective competition by bringing new products to the market that better meet consumers' evolving needs and preferences.

Key themes of our sustainable finance strategy

3.22 We want to ensure our regulatory approach creates an environment where regulated firms and listed issuers can adequately manage the risks from climate change and the need to move to a low carbon economy. And we want firms to be able to capture opportunities to benefit consumers. More broadly, we want to help firms and consumers bring about wider societal benefits by accelerating the transition to net zero, consistent with the Government's commitment. And we want to work internationally to promote global consistency, as a regulatory regime based on global standards provides greater clarity for firms and issuers and helps lessen regulatory burden.

3.23 In the section on ESG in our Business Plan, we set out the outcomes we want to achieve:

- high-quality climate- and sustainability-related disclosures to support accurate market pricing, helping consumers choose sustainable investments and drive fair value

- promote trust and protect consumers from mis-leading marketing and disclosure around ESG-related products
- regulated firms have governance arrangements for more complete and careful consideration of material ESG risks and opportunities
- active investor stewardship that positively influences companies' sustainability strategies, supporting a market-led transition to a more sustainable future
- promote integrity in the market for ESG-labelled securities, supported by the growth of effective service providers – including providers of ESG data, ratings, assurance and verification service
- innovation in sustainable finance, making use of technology to bring about change and overcome industry-wide challenges

3.24 These outcomes mesh with our existing sustainable finance strategy, as set out in Nikhil Rathi's speech in November 2020, which focuses on 3 key themes:

- **Transparency:** Promoting good and consistent disclosures along the investment chain.
- **Trust:** Ensuring that the market delivers sustainable finance instruments and products that genuinely meet investors' sustainability preferences – and are seen to do so.
- **Tools:** Government, regulators and industry working collaboratively to share experience, develop consistent guidance and tools and provide mutual support as we confront the challenges of climate change.

Transparency

3.25 A market-led transition to a net zero economy will require high quality information on how climate-related risks and opportunities are being managed throughout the investment chain. Better information from companies in the real economy will inform market pricing and support business, risk and investment decisions.

3.26 Enhanced disclosures to clients and consumers will help them make more informed decisions about their investments. This will protect consumers from unsuitable products and drive investment towards greener projects and activities.

3.27 To pursue transparency of climate-related information, we are implementing the global TCFD recommendations within our regulatory framework, as part of the Government's wider UK TCFD implementation strategy. We are also supporting the International Financial Reporting Standard (IFRS) Foundation's proposals to establish an International Sustainability Standards Board (ISSB), to create one consistent standard internationally.

Trust

3.28 We have seen continued strong inflows into sustainable finance products this year – ESG equity funds saw net inflows of £995m in the UK in July 2021 alone. And this is expected to continue: a PwC report published in November 2020, for example, suggested that ESG-oriented funds could increase their share of the European fund sector from 15% to more than 50% by 2025. We have had a high volume of applications to us for fund authorisation with an ESG focus. These trends reflect that consumers care about climate issues.

3.29 ESG products take many forms, involve different strategies, and often use complex terminology. Commercial and ESG considerations do not always align, so we need to make sure that consumers can trust information about ESG products. It is essential that products marketed with a sustainability and ESG focus are described accurately and any assertions made about their goals are reasonable and substantiated. Where consumers find it difficult to assess whether products meet their needs and preferences, there is potential to undermine trust and deter consumers from the sustainable finance markets. This in turn could result in a lack of effective competition between the firms providing ESG or sustainable products. As part of that, well-functioning ESG and sustainable investment markets are important for the proper allocation of capital in pursuit of a net zero economy. We explore this in more detail in the chapter of this report on capital mobilisation.

Tools

3.30 Sustainable finance is a fast-moving area, with new products and industry initiatives launched regularly. Collaboration between regulatory partners, and between regulators and industry, is crucial to supporting this growth and creating new tools to enable investors to take advantage of the opportunities in this area.

3.31 Alongside the PRA, we co-chair the Climate Financial Risk Forum (CFRF). This forum brings together senior financial sector representatives to share their experiences in managing climate-related risks and opportunities. In June 2020, the CFRF published a guide to climate-related financial risk reporting. This includes dedicated chapters on disclosures, scenario analysis, risk management, and innovation. In the time since the publication, the CFRF has sought to refine and build on the guide's recommendations. Its second round of guides was published on 21 October 2021.

3.32 We are also using our regulatory innovation tools to support our wider sustainable finance agenda. The Kalifa Review of FinTech highlighted the role of ESG and called for regulators, Government and industry to collaborate and advance the sustainability agenda. We discuss how we are using a range of innovation initiatives to do this in Chapter 6 of this report.

Evolving our sustainable finance strategy

3.33 The transition to a more sustainable future is a central theme for COP26, with the COP26 Private Finance Hub working to accelerate progress in this sector. The Private Finance Hub is led by UN Special Envoy and Adviser to the Prime Minister, Mark Carney. The Hub aims to build a system that mobilises private finance to support the re-engineering of economies for net zero, and we have 3 FCA secondees at the Hub to help achieve this goal. There is also mounting pressure on businesses to be more purposeful and responsible, particularly as we recover from the pandemic.

3.34 Building on the themes and priorities we have established so far, our approach will be to embed climate considerations across all our functions. We are continuing to evolve our strategy with increased resources, and we will publish a refreshed ESG strategy this autumn, which will discuss our approach to wider ESG themes as well as climate change.

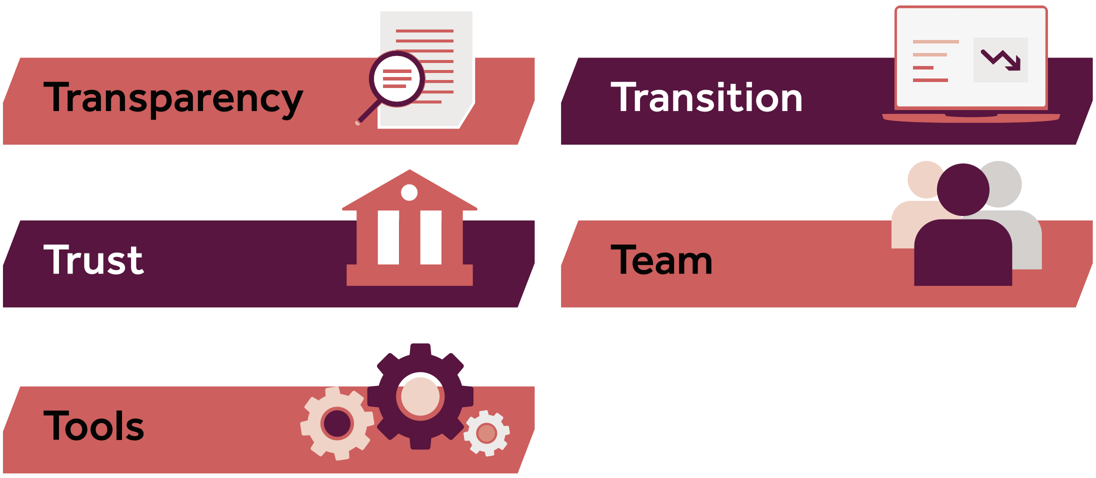
Transition

3.35 As we embed the new 'have regard', Transition is a central theme of our ESG strategy, alongside Transparency, Trust and Tools. We are developing our role in supporting a market-led transition to a more sustainable future, including promoting and facilitating appropriate, achievable and accountable net zero strategies from both listed companies and regulated firms. We reflect on this further in the chapter of this report dedicated to the transition to net zero.

Team

3.36 We are also working to embed climate and other sustainability considerations within how we function as an organisation. This includes expanding the role of our Sustainable Finance Hub and our network of internal ESG champions. More broadly, we are developing strategies, organisational structures, resources and tools to support our regulation of sustainable finance. We want to ensure that we are joined up, both internally as an organisation and externally with other regulators, to promote real change and provide consistency for consumers and regulated firms.

Figure 2: The five Ts of our sustainable finance strategy going forward



The role of our international engagement

3.37 Climate change is a challenge that extends beyond national borders, and so needs a global response. Given the interconnected nature of our firms and markets, with many firms' operations transcending national boundaries, we are working closely with international partners to discuss common challenges and support globally-aligned solutions in sustainable finance.

3.38 Many elements of our work programme are internationally oriented. We seek to position ourselves as a leader internationally by:

- shaping the global sustainable finance debate through active engagement in international fora
- using our policy programme to establish and maintain regulatory good practice on sustainable finance issues

3.39 To achieve these objectives, we are active members of working groups within global standard setters. In particular, we are leveraging our position as co-chair of the International Organization of Securities Commissions (IOSCO) Sustainable Finance Task Force issuer disclosures work stream to drive forward global support for the ISSB. We also host regular technical meetings with international counterparts and partners, to share views and best practice in evolving policy areas.

3.40 This international work is crucial to delivering our objectives. International coordination on sustainable finance is key to avoid fragmentation of regulatory requirements and to share insights in a developing area of the market. We will continue to contribute to the international conversation on sustainable finance and promote globally-aligned solutions.

4 Climate change risks and how we are aiding adaptation

4.1 Climate change presents far-reaching financial risks from both physical factors, such as extreme weather events, and transition risks from the process of adjusting to a net zero economy.

4.2 These risks, and the way that firms respond to them, are highly relevant to our role in ensuring the UK's financial services markets work well. And alongside physical and transition risks, we recognise that additional challenges, such as data gaps and inconsistency of climate metrics and methodologies, may complicate firms' ability to fully integrate these risks into how they operate and make decisions.

4.3 If climate-related financial risks are not managed, they may lead to consumer and market harms and affect all the firms and sectors that we regulate.

4.4 In this chapter, we provide an overview of the climate-related risks that financial services sectors are exposed to. Particularly, we have focused on the sectors below:

- pensions and retirement income
- retail investments
- retail lending
- wholesale markets
- general insurance underwriting

The main financial risks

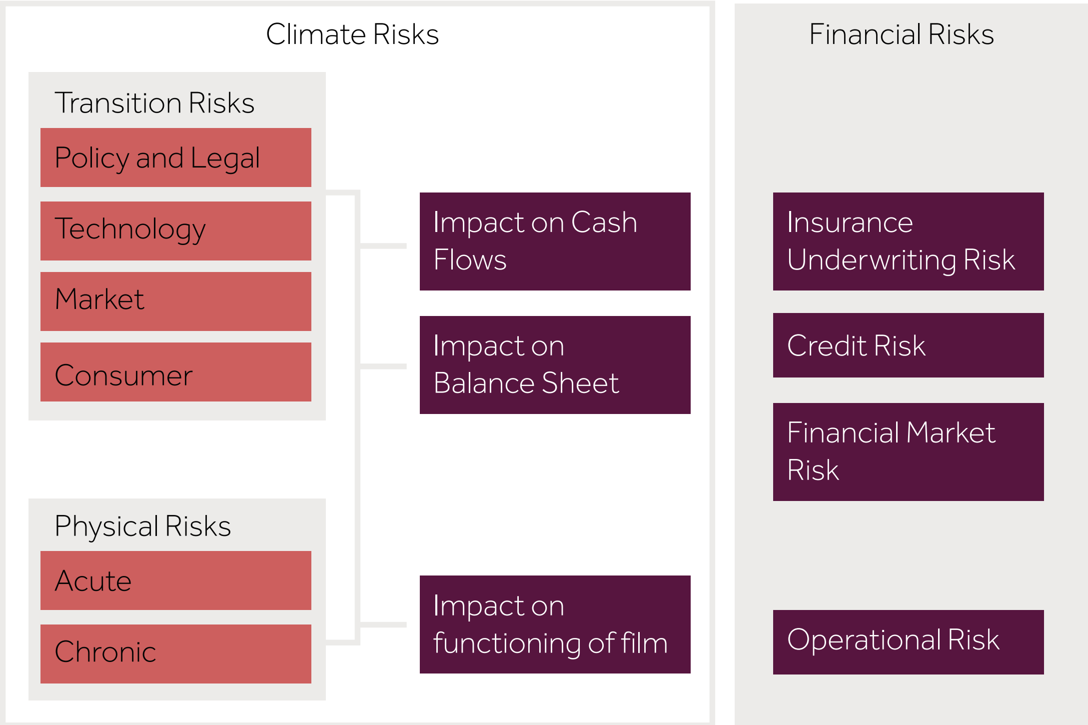
4.5 We and the PRA jointly established the CFRF in 2019 as part of our commitment to deliver a programme of climate change and green finance initiatives. The CFRF published a guide in June 2020 to help firms manage and adapt to climate-related risks and opportunities. Climate-related risks manifest themselves in the financial services sector as drivers of existing types of risk. As a result, climate risks need to be managed as an integral part of a broader approach to risk management, rather than as a distinct and separate set of risks to address. The guide published in June 2020 highlighted how the crystallisation of physical and transition risks can manifest in:

- *Insurance underwriting risk:* significant insurance losses due to the increased frequency and severity of extreme weather events (ie physical risks), which has an impact on reserving and pricing.
- *Credit risk:* financial loss due to the deterioration of counterparties' creditworthiness from the impact of climate change on operations and assets. For example, breakdown of supply chains due to weather events and assets becoming stranded (ie becoming worthless or uninsurable due to their exposure to climate change risks) may be underlying causes of increased credit risk to lenders.
- *Financial market risk:* the impact on the value of bonds, loans, property/real estate, commodities and equities due to the societal, legal and technological response to climate change. There is evidence that climate risks are not yet internalised within

asset valuations. 2019 IMF research concluded that aggregate equity valuations do not reflect various climate change scenarios, suggesting that investors do not pay sufficient attention to climate risk.

- *Operational risk:* The potential economic, reputational and compliance impacts of inadequate or failed internal processes and systems, or from external events, including legal risk and the risk of a material misstatement in financial reporting.

Figure 3: Financial risks affected by climate risk (CFRF guide).



4.6 There are other risks associated with climate adaptation and the transition to net zero that may affect firms. These can include the following:

- *Asset write-downs:* may lead to financial loss, investment underperformance or pension income shortfalls. When financial institutions are making investment decisions it can be difficult for them to make precise judgements about climate risks. Investment in assets that are or that become stranded is an obvious example of where the risk of asset write-downs may crystallise. Estimates of losses that will be incurred from stranded assets vary wildly but suggest they may run to tens of trillions of US dollars.
- *Reputational risk:* may occur when firms make misleading ESG claims or when they face challenges in developing clear plans in response to climate-related risks. For example, if a firm's marketing/product strategy over-promises on their ESG claims. Importantly, greenwashing may lead to reputational damage and an increased litigation risk. The UNEP Global Climate Litigation Report highlights that consumer-rights organisations and other groups may take legal action against firms making misleading claims. It notes that, between 2017 and 2020, the number of litigation climate cases almost doubled from 884 to 1550.

4.7 Additionally, ESG data gaps can constrain firms' ability to fully integrate these risks. For instance, lack of consistent, comprehensive and comparable investee-company disclosures inhibits regulated firms' ability to integrate and report on those climate risks and broader ESG factors.

4.8 More consistent and reliable data can lead to better informed business, risk and investment decisions along the investment chain. We have used CP 21/18 to further the discussion and engage stakeholders on the increasingly prominent role of ESG data and ratings providers (which we discuss further below). These issues may require further policy intervention to address any potential harms. The consultation concluded in September 2021 and we are now considering the feedback we received.

Financial services sectors – Overview of climate related risks and harms

4.9 Across the sectors we regulate, different harms can materialise in varying degrees. Some sectors or individual firms have been adapting their risk mitigation strategies in response to climate-related risks. The regulatory environment has also been adapting, with a range of initiatives and requirements introduced. In the remainder of this chapter, we examine a range of financial services sectors and how these sectors have been responding to climate change.

Pensions and retirement income

4.10 The UK pensions system is complex, consisting of occupational and workplace schemes arranged by employers and non-workplace pensions which consumers arrange for themselves. Occupational schemes, overseen by a trustee, are regulated by TPR, while we regulate workplace and non-workplace schemes which are provided by insurers and Self-Invested Personal Pension (SIPP) operators.

4.11 Pensions of all kinds suffer from relatively low consumer engagement, because the product is long-term in nature. However, there have been some significant changes recently which seek to better align outcomes with climate change-related risks and opportunities. This picture is still evolving, and there will no doubt be further changes as a result of the industry's own initiatives, as well as government and regulatory action.

4.12 Following the Law Commission's work on ESG and pensions, we have imposed duties on trustees, firms and Independent Governance Committees (IGCs) to take account of both financial and non-financial considerations when formulating investment strategy. In the case of IGCs, this refers to reporting on the relevant firm's policies. This includes environmental considerations. The Department for Work and Pensions (DWP) has introduced similar requirements for the trustees of occupational pension schemes. We work closely with DWP and TPR to ensure that our approach to climate change is consistent across all pension types, so that members of all pension schemes benefit from the same experience and level of protection. If pension funds do not take into account long term physical and transition climate risks, there is a risk that pensions will remain invested in assets which decline in value when climate risks crystallise. Where pension providers integrate climate risk in their investment strategies it can help ensure better long-term outcomes for consumers by protecting pension pots from being negatively affected by climate change.

4.13 These rules have helped increase pension schemes' engagement on climate issues. We also work to promote effective stewardship and engagement that supports this. Stewardship has an important role to play in both climate adaptation and mitigation. By actively engaging with their asset managers and investee companies, pension schemes can leverage their shareholder power to push for change in the real economy towards a more sustainable future. In doing so, they can help make their own businesses more resilient to the future impacts of climate change and ensure better long-term outcomes for pension savers.

4.14 Stewardship is also key to supporting the transition to net zero, as asset owners can encourage investee companies to make commitments and set targets for achieving this. Integrating these considerations into their investment strategy will not only help pension providers meet their own commitments to net zero, but also help drive the transition in the wider economy.

4.15 In 2019 we made rules to implement the Revised Shareholders Rights Directive (SRD II). Our rules require life insurers and asset managers to make disclosures about their long-term investment strategies, their arrangements with each other and their engagement with the companies they invest in. This helps ultimate investors understand how those who look after and manage their investments make decisions, and to select firms whose strategies match their own preferences.

4.16 In January 2019, we published a discussion paper (DP19/1) with the FRC on the regulatory framework for effective stewardship. We set out our conclusions in Feedback Statement FS19/7, which was published alongside the FRC's revised UK Stewardship Code 2020. We continue to work closely with the FRC, other regulators and industry as firms continue to develop their stewardship strategies.

4.17 Consistency and clarity in data reporting has been identified as a fundamental barrier to effective climate risk mitigation in pension schemes' investment strategies, as in this study by the Pensions Policy Institute. And a Pensions and Lifetime Savings Association (PLSA) survey in 2020 found nearly two thirds of schemes felt they did not have sufficient information to integrate climate risks into their investment strategy. To help address this, DWP has introduced requirements on trustees to report on climate change risk and impact using the TCFD framework, and we are consulting on similar requirements for the firms we regulate.

4.18 In auto-enrolled workplace pensions, the vast majority of savers are invested in default funds. For example, more than 99% of savers with NEST - one of the largest pension plans in the UK - are invested in the default fund. It is important then that these default funds are designed with climate risk taken fully into account. Our TCFD disclosures proposals will require pension providers to produce and report on scenario analyses and carbon intensity metrics at the default arrangement level. This will promote transparency and put pressure on providers to ensure that climate change risks and opportunities are embedded in defaults. We set out our proposals for implementing TCFD in greater detail in Chapter 6 of this report.

Retail investments

4.19 The sustainable investment sector has been experiencing an unprecedented demand for ESG products. This reflects a market that is adapting at pace to climate-related changes – albeit driven by consumers' needs and preferences more than direct physical events. But it nevertheless raises several issues about how the industry and other stakeholders adapt, which revolve primarily around transparency and disclosures.

4.20 The risk of greenwashing may be particularly relevant for retail investors in the fund management sector. Reflecting this, we set out our concerns about the quality of the ESG fund applications we have been receiving in a letter to the Chairs of authorised fund managers (AFMs) in July 2021. We have a role as a regulator to build trust in this segment of the market and our letter made clear that we expect the quality of ESG-related fund applications to improve. We also emphasised the importance of clear and accurate ongoing disclosures to consumers where funds make ESG-related claims.

4.21 To help address our concerns, we developed a set of guiding principles for the design, delivery and disclosure of retail ESG/sustainable funds, which was included in the letter. These principles aim to help consumers make more informed choices.

Guiding Principles for the design, delivery and disclosure of retail ESG/sustainable funds

- References to ESG (or related terms) in a fund's name, financial promotions or fund documentation should fairly reflect the materiality of ESG/sustainability considerations to the objectives and/or investment policy and strategy of the fund.
- The resources (including skills, experience, technology, research, data and analytical tools) that a firm applies in pursuit of a fund's stated ESG objectives should be appropriate. The way that a fund's ESG investment strategy is implemented, and the profile of its holdings, should be consistent with its disclosed objectives on an ongoing basis.
- ESG/sustainability-related information in a key investor information document should be easily available and clear, succinct and comprehensible, avoiding the use of jargon and technical terms when everyday words can be used instead. Funds should disclose information to enable consumers to make an informed judgement about the merits of investing in a fund. Periodic fund disclosures should include evaluation against stated ESG/sustainability characteristics, themes or outcomes, as well as evidence of actions taken in pursuit of the fund's stated aims.

4.22 These guiding principles are complementary to the measures the Government is developing. We are working closely with the Government and providing technical advice to them on:

- Creating a Taxonomy. The Government has established a Green Technical Advisory Group (GTAG) to oversee the Government's delivery of a 'Green Taxonomy' – a common framework setting the bar for investments that can be defined as environmentally sustainable. The GTAG is made up of financial and business stakeholders, taxonomy and data experts, and subject matter experts. We are included as standing observers.
- Developing economy-wide Sustainability Disclosure Requirements for corporates, asset managers, asset owners and investment products to report on their sustainability risks, opportunities and impacts. This work will build on measures already taken or underway to implement the TCFD's recommendations.
- Creating sustainable investment labels, so that consumers can navigate the range of investment products based on their sustainability characteristics.

ESG-related information

Another area of the industry adapting to climate change – and one that is relevant to pensions and retirement income, as well as to retail investments – is in the provision of ESG-related information. But this, too, raises challenges and risks.

ESG information from investee companies can be incomplete and inconsistent and does not always provide decision-useful information for investors. This leads to risk of mispricing investee companies' financial instruments and misallocating capital, in turn harming market integrity.

ESG data and ratings providers are becoming more prominent but there are many issues with inconsistency between providers. Other regulators have considered this issue recently. For instance, in December 2020, the French Autorité des Marchés Financiers and the Dutch Autoriteit Financiële Markten issued a position paper proposing a European regulatory framework for ESG data, ratings and related services. The proposed framework set out in the paper includes requirements regarding transparency of methodologies and 'enhanced dialogue' with companies that are given sustainability ratings.

Inconsistent data and disclosures from issuers and ratings providers can lead to consumers (both retail and institutional) remaining invested in products that are unsuitable for their needs and preferences as they cannot assess performance effectively. As set out above, we have been driving a programme of change to bring about improvements in disclosure requirements, reporting standards and the design and delivery requirements of ESG funds.

Retail lending

4.23 The Environment Agency estimates that 5.2 million homes and businesses in England are at risk of flooding and coastal erosion. The flooding in 2015/16 was estimated to cost the economy £1.6 billion. In 2019/20 the cost would have been £2.1bn had it not been for increased flood defences, which limited the cost to an estimated £78 million. Terrafirma's National Ground Risk Model estimates that 4,000 domestic properties are currently considered to be at substantial risk from coastal erosion across England, Wales and Scotland. This figure is expected to rise to around 23,000 by 2100.

4.24 The mortgage sector needs to consider the impact of coastal erosion and flood risk on housing valuations. In a recent report by the Basel Committee on Banking Supervision, concerns were raised for households exposed to severe flood risk, since this can affect home prices. There is evidence of a decline in property values as a result of extreme weather events or chronic flooding. For example, prices for flooded areas in New York City dropped almost 20% after Hurricane Sandy, and 3 years later, homes in those areas were still valued at 10% lower than those in unflooded ones. Furthermore, the Bank of England's discussion paper earlier this year highlights that 'around 10% of the value of mortgage exposures in England is on properties in flood-risk zones'. Banks could face greater losses than anticipated if values of collateral are reduced.

4.25 A Climate Wise report published in 2019 suggested that for financial institutions lending against real estate and infrastructure assets, increases in extreme weather events may intensify the likelihood of defaults due to borrowers' increased financial losses. For investors in real estate and infrastructure assets, these changes can lead to asset devaluation.

4.26 Our ongoing monitoring of the mortgage sector indicates that lenders are taking into account climate-related risks as they feed through into credit risk and a risk to the collateral held against loans. They are using tools like the National Ground Risk Model to help integrate climate-related ground risks. But we do not observe significant, widespread changes in lenders' behaviour in response to climate change outside their usual risk calculations. Indeed, we note and share the concerns reflected in the PRA's Climate Change Adaptation Report, published today, that banks need to be taking a strategic and organisation-wide approach to climate change, including both their mortgage and financing activities.

4.27 We have also observed that lenders have differing approaches to offering equity release for properties in flood zones. Time elapsed since the last flooding, the frequency of flooding, valuation of the property and availability of insurance can affect whether a lender will consider a property eligible for equity release. As the likelihood and severity of flooding increases due to climate change, we are concerned that more consumers will be left unable to access equity release as an option.

4.28 While significant challenges remain, we, other UK authorities and the industry have driven a programme of change to address the risks within the retail lending sector.

- The CFRF's working groups have been focusing their attention on producing tangible outputs to help the industry in adapting to climate-related financial risks. In October 2021, the CFRF published guidance on a climate risk appetite statement (RAS), focusing on 4 sectors, including retail banking.
- The Bank of England's 2021 Climate Biennial Exploratory Scenario (CBES) will explore the financial risks of climate change for the largest UK banks, including retail lenders. This exercise aims to highlight where action may be necessary and improve firms' risk management and prompt a strategic view.

Wholesale markets

4.29 Wholesale financial markets are central to managing the risks from adapting to climate change and facilitating the transition to net zero. These markets, including OTC derivatives and commodity markets, enable risk transfer and hedging. This helps market participants, including corporates in the real economy, to mitigate climate risks and finance activities to benefit from the opportunities the transition presents.

4.30 The current market for climate finance, defined as financing that supports the transition to a low-carbon and climate-resilient economy, is estimated to be in the region of $600 billion and will need to scale up 5 to 8 times to enable the transition, based on average annual estimates of around $3–5 trillion in financing needs.

4.31 Significant sums will need to be raised, especially in Asia, through a mix of asset classes, with a recent report estimating that 35% would need to come from equity, 44% from loans, and 21% raised in debt capital markets bonds.

4.32 But all asset classes will need to scale up to meet the challenges of climate change, both for climate mitigation purposes and to better manage climate risks, including via derivatives markets and by pooling risks and securitisation.

4.33 Financial markets act as channels through which climate-related risks and opportunities can affect the financial system. And they can reflect policy responses to climate change or a lack of action. For example, unanticipated policy responses may create the conditions for disorderly market price adjustments with potentially far-reaching implications, as the Financial Stability Board noted in a report last year.

4.34 Given the high level of uncertainty surrounding global and local responses to and the future path of climate change, it is challenging for market participants to model the corresponding price impacts.

4.35 Irrespective of baseline estimates of the extent of climate-related asset price impacts, there is a degree of consensus that the price impact of climate change on assets will be unevenly spread across the economy and could pose significant tail risks in certain sectors under certain scenarios. There has been limited research on transition-related tail risks, and it may be that the financial downsides of a catastrophic policy failure are incalculable.

4.36 This is further exacerbated by difficulties in securing good enough data to gauge exposures to climate-related risks and opportunities undermining fair and effective market outcomes. As we discuss in Chapter 6, one of our areas of focus has been to strengthen requirements for issuers and regulated firms around their market and client-facing climate disclosures. We see this as vital to improve the availability and quality of data, allowing for better risk management and adaptation.

4.37 Better data and risk management tools will also assist wholesale banks and insurers to make better-informed lending and underwriting decisions. UK wholesale banks, both as principals and intermediation agents – through their lending, financing, capital raising, risk mitigation and client execution services – can exert significant influence over the whole economy, both in the UK and internationally. Through their own actions, banks are important drivers of the transition to net zero.

4.38 Banks and insurers, in turn, can improve transparency in their activities and demonstrate that their own business and that of the clients they support are adapting to climate change and evolving to meet net zero targets. Indirectly, this can make the financial system more resilient as a whole.

4.39 As part of our engagement with the PRA, we plan to share experience and market insights on developments in sustainability by dual-regulated firms.

Spotlight on general insurance underwriting

4.40 Climate change is a slow-moving process when considered through the lens of general business challenges. Given the nature and timescales of their business models and risk profiles, insurers are particularly exposed to – and consequently have long been conscious of – the risks from our changing climate. Nevertheless, those risks remain a threat and need to be appropriately managed. The PRA's Climate Change Adaptation Report notes that, while firms have made significant progress in some areas, there is still much more to be done by insurers in other areas, such as scenario analysis, to sufficiently integrate climate risk.

Risks to insurers

Physical risk

4.41 Physical risk from climate change is manifested in severe weather-related events. The Association of British Insurers (ABI) has said that 'an increased frequency and severity of major weather events means a higher number of more costly claims for insurers to deal with, globally as well as in the UK'. Swiss Re, the world's largest reinsurer, concluded that global insured losses from natural catastrophes were $81 billion in 2020, up from $63 billion in 2019.

4.42 There are further physical risks that arise from our changing climate. According to data from the British Geological Survey, there is also an increased risk of subsidence due to the warmer, drier summers and increases in global warming. In a medium emissions scenario, the area of Great Britain that is likely to see increased risk of subsidence increases by a third from 2020 to 2030 and triples by 2050. 2018's extreme heatwave led to more than 10,000 households needing to claim for damage caused by subsidence, at a cost of over £64million.

4.43 An increasing number of damage-causing events which lead to claims may initially appear to be a challenge for insurers. However, the industry is broadly adapting to the changing business and climactic environment. An increased frequency of claims events requires insurers to make payouts, but it may also stimulate demand for insurers' products. This would increase the customer base and thus insurers' premium income.

4.44 Insurers are responding to the greater frequency of claims events in a variety of ways:

- improved data and more sophisticated approaches to catastrophe risk modelling allow insurers to better anticipate trends and to predict the frequency and intensity of future claims events more accurately
- diversifying risk portfolios by insuring a large range of non-correlated risks reduces the exposure of insurers to any one hazard or risk category
- using reinsurance and alternative risk transfer through capital markets reduces insurers' peak exposure
- the predominance of annual contracts in the insurance industry means insurers are able to absorb new information and knowledge in real time, and to reprice accordingly as understanding of changes and risks develops

4.45 Regulatory capital requirements also help to build insurers' resilience. Insurers are required to set aside an amount of capital to ensure they will remain solvent over a 1-year period with a confidence level of 99.5%. Insurers hold sufficient capital to withstand the losses of all except a 1 in 200-year event.

4.46 The frequency and severity of such events will change as the impacts of climate change bite further. Nevertheless, the essential elements of the insurance business model, and the prudential buffer built into the model by regulatory capital requirements, broadly permit insurers to adapt to changes in the operating environment. Insurance firms therefore have the tools and framework to respond to the physical risks of climate change.

4.47 However, better data, improved models and more developed understanding occasionally mean that previously insured risks become uninsurable at a price that consumers can afford. This may result in a protection gap, with customers unable to access appropriate, affordable and timely insurance cover to protect against the risk of economic loss. Swiss Re estimated the natural catastrophe protection gap in Europe as USD 15 billion in 2019, with only 31% of annual losses arising from natural catastrophes covered by insurers. Such a protection gap is also likely to have a detrimental effect on investment, growth and financial stability before an event occurs, as consumers, firms and institutions behave more cautiously in the absence of protection.

4.48 In such circumstances, public authorities and the industry may conclude that the provision of insurance cover has more of the nature of a public good. The creation of Floor Re is an example of such a response.

Case study – Flood Re

4.49 Flood Re was proposed and developed by the UK insurance industry. It is a levy and pool system, with every UK insurer paying into the scheme. 2% of UK homes have been built in areas with a greater than 1-in-75 annual probability of flooding. Their flood risk is deemed significant and challenging to insure in an unsupported market. Through Flood Re, the costs for insuring this 2% are shared by the other 98% of homes, with the risk ceded from the primary insurer to Flood Re.

4.50 The scheme helps insurers, property owners and local authorities to adapt to climate change in several ways. It excludes properties built from 2009 onwards to avoid incentivising new homes being built on high flood risk land. It will remain in place for at least 25 years, to allow homeowners and public authorities to adapt properties and strengthen flood defences to respond to the challenge of more significant and frequent flooding. And it has a defined end date, to allow the market to transition to normal risk-reflective pricing over a fixed period.

4.51 While Flood Re has helped more than 300,000 households according to DEFRA, not all potential consumers use it. There is also a risk that some eligible consumers may not be covered in the case of floods. An independent review commissioned by the Government following the 2019 flooding in Doncaster found a small but significant number of eligible people held insurance that excluded flood cover, even though they lived in a high-risk flood location. An encouraging step for the sector is that DEFRA launched a consultation in February 2021 considering the recommendations of the review and proposing measures to improve take-up of flood protection and the efficiency of the Flood Re Scheme.

4.52 A report by Climate Wise also suggests that Flood Re's funding gap could increase. The report notes that in a 4°C warming by 2100 scenario, the number of properties where the annual probability of flooding is greater than 1 in 75 could increase by 40%, raising concerns about the sustainability of initiatives like Flood Re.

4.53 Flood Re represents an industry-led approach to respond to climate change. It has had some success in correcting a market failure which would otherwise lead to a significant protection gap and loss of economic value for homeowners. Flood Re offers valuable lessons for future climate adaptation efforts for insurers, wider industry and society at large.

Liability risk

4.54 Liability insurance protects a policyholder from the risk of being held legally liable for the loss and damage suffered by other parties as a result of the policyholder's actions. For insurers, liability risks could arise if plaintiffs who have suffered loss or damage from climate-related risks take legal action against insured policyholders whom the plaintiffs consider liable for climate-related losses or damage they have incurred.

4.55 Liability could be claimed in several ways:

- Plaintiffs could claim that insured parties have failed to take mitigating action and are thus responsible for the physical impacts of climate change. However, it may be challenging for plaintiffs to establish core elements for a case to succeed.
- Plaintiffs could bring cases on the basis of alleged failure of policyholders to adapt to or account for climate change risk factors in their acts, omissions or decision-making. Such cases may have greater chance of success, given that claims may be formulated under existing statutory or common law causes of action. However, plaintiffs will still have to demonstrate materiality and causation, and courts may question the extent to which losses were reasonably foreseeable, or whether losses were caused by specific failures of policyholders.
- Plaintiffs may also bring cases on the basis of alleged failure of policyholders to disclose information relevant to climate change, having done so in a misleading manner, or having otherwise not complied with climate change-related legislation or regulation. Cases of this type may be among the soonest to succeed, as courts are familiar with and ready to enforce comparable transparency, disclosure and reporting regulation.

4.56 Climate change-related litigation is still in its infancy, and few claims have yet succeeded. This is not unusual for a new field of claims. Historical experience with asbestos and pollution claims suggests that, although plaintiffs may find it challenging to get traction in the courts initially, a growing scientific consensus combined with increasing litigation eventually leads to substantial claims.

4.57 One interesting example is the case of Luciano Lliuya vs. RWE AG. Luciano Lliuya is a Peruvian farmer who has filed claims for damages against RWE, Germany's largest electricity producer, for their contribution to the greenhouse gas emissions that are causing nearby mountain glaciers to melt and flood Lliuya's town. In 2015, the case was initially dismissed at district court level. But in November 2017 the higher regional court ruled that the case was well founded and could proceed to evidence gathering. Both sides seek to avoid a settlement, recognising that the outcome of the case will set a precedent for further liability claims.

4.58 The experience with asbestos and pollution-related claims shows liability risk can crystallise over a relatively short period and prove costly. In seeking to adapt to liability risk arising as a result of climate change, insurers may want to:

- examine the interaction between existing and analogous disclosure and duty of care requirements and circumstances which could feasibly arise as a result of climate change
- examine the wording of current policies for potential exposure to future climate change claims, and
- maintain a forward-looking approach to managing risks in this area, including horizon scanning for potential climate litigation lawsuits and other developments both in a domestic context and in other jurisdictions.

Opportunities

4.59 In discussions of adaptation to climate change, attention often focuses on how best to meet the challenges. But climate change also presents opportunities for insurance firms.

4.60 Climate change is a source of risk, for individuals and for groups. As with any other category of risk, it will be more easily carried if people and firms pool the risk by taking out insurance. Although the extent of the crystallisation of climate change risk is not yet known, climate change-related events will occur and they will cause damage and loss. For a natural or legal person who incurs such a loss, an insurance policy that is quickly able to make good the loss will clearly be beneficial. The greater the number of losses arising from any particular event that are covered by insurance, the greater the overall good for the individuals concerned.

4.61 As the insurance customer base widens, the proportion of risk borne by any particular member of the group reduces. Spreading fixed costs over a larger group reduces the cost to be recovered per individual. Advantages arise for all stakeholders as more people become insured. Individuals pay less and bear less risk. Insurance firms in turn may be able to diversify. And society benefits from individuals taking controlled risks in a measured manner, knowing they will be protected should an insured event occur.

4.62 Insurers are well placed to seize the opportunities of adaptation to climate change in a way that benefits insurers themselves, policyholders and wider society. Insurers can work to improve awareness of climate change risk and provide informed advice on risk and loss mitigation, particularly for direct physical risks to property-related assets. This will both expand the market and increase the proportion of the population that is appropriately protected.

4.63 Insurers can also feed into public policy and work to educate those who are or may become policyholders by providing guidance on how clients can become more resilient to risk. This will reduce insurers' payout costs, and the costs (including non-financial costs) to society overall.

4.64 There is also considerable potential for insurers to innovate and develop new products, particularly in areas involving the transition to net zero. The rapid expansion of low carbon infrastructure provides opportunities in renewable energy project insurance. Insurers can most obviously offer protection against design and construction risk, but there is also potential to accept performance risk. For example, insurers may wish to cover income shortfalls from weather-dependent power generation in changing climactic conditions.

4.65 Public policy also presents opportunities. Insurers may wish to accept public policy risk, for example by providing cover for the sudden withdrawal of renewable energy subsidies. And old insurance product concepts may be tweaked to attract new customers or to improve profitability. Examples include 'pay-as-you-go' motor insurance policies, which can incentivise a reduction in private use of cars, or 'eco home' policies, which can encourage greater energy efficiency.

Supporting adaptation in the insurance sector

4.66 In October 2021, the CFRF published guidance to support the financial services sector on developing a climate risk appetite statement (RAS), an essential aspect of climate risk management. The aim is to offer practical advice on writing, implementing and maintaining an effective RAS, factoring in different aspects of climate risk, and it focuses on 4 different sectors – including insurers.

4.67 The TCFD's Supplemental Guidance for the Financial Sector outlines specific recommendations for insurance companies' underwriting activities. The Supplemental Guidance recommends that insurance companies should describe the potential impacts of climate-related risks and opportunities on their business, in terms of both strategy and risk management. It makes specific reference to considering the increased likelihood of extreme weather events, and the increased physical and liability risks that will occur as a result.

4.68 The ABI published a Climate Roadmap in July 2021 which sets out 4 pillars of action on climate change: meeting net zero by 2050, unleashing investment capacity, sustainable industry operations and helping society adapt. The Roadmap recognises that much of the insurance industry's progress so far has focused on insurers' investment activities and the need to apply these lessons more broadly to their underwriting activities as well. The first pillar on net zero includes underwriting activities in the interim and final decarbonisation goals. Pillar 4 looks at insurers' role more holistically and how they can facilitate adaptation through their touchpoints with consumers of insurance products.

5 Transition to net zero

5.1 In 2015, 196 countries adopted a legally binding international treaty on climate change. The treaty, known as the Paris Agreement, aims to limit global warming by achieving net zero (a state where there is no net release of greenhouse gas emissions into the atmosphere) by 2050. In 2020, the UK Government made its own legally binding commitment to reaching net zero by 2050.

5.2 UK listed companies and financial services firms will therefore need to align their activities with net zero by 2050 at the latest. Some have already begun proactively committing themselves to doing so, in some cases by earlier than 2050.

5.3 We welcome this. Listed companies and financial services firms have important roles to play in facilitating the transition to net zero. UK listed companies will need to reduce their emissions by 2050 to meet the Government's target. Financial services firms can help encourage this transition through engaging with investee companies and directing capital to fund their transition, as well as by reducing their own emissions.

5.4 We have a part to play, alongside listed companies and financial services firms, in the transition to net zero. As set out in Chapter 3, we should 'have regard' to the UK Government's target of net zero by 2050 when carrying out our duties. So we have begun the process of integrating consideration of net zero into our own activities.

5.5 Following the appointment of Sacha Sadan as FCA Director of ESG, we are broadening and deepening our sustainable finance work programme, and projects considering net zero will form a significant proportion of this work. Planned projects include:

- **Transition plans.** In July 2021 the Chancellor announced plans to encourage and support firms to publish net zero transition plans. We will be working closely with the Treasury to help deliver this commitment.
- **Net zero investor stewardship.** We are part of a Stewardship Regulators Group, which is chaired by the FRC and made up of the financial regulators and relevant Government departments. The Group has an ongoing workstream on stewardship of climate and sustainability matters. One area of focus has been how shareholder voting can help drive positive change. In Summer 2021, the Group gathered views from a cross-section of stakeholders on the policy case for, and possible design of, 'Say on Climate' resolutions at annual general meetings. Some have suggested this as a potential vehicle for systematic shareholder scrutiny of companies' net zero transition plans. The Group will consider next steps in light of the feedback received from stakeholders.
- **Research on capital mobilisation.** We are carrying out research considering capital mobilisation and net zero. This work is assessing the need for efficient capital allocation, potential market failures and barriers to the flow of funds that may inhibit the financing of green initiatives. We discuss capital mobilisation in the following chapter.
- **Innovate Digital Sandbox.** We announced at Innovate UK FinTech Week that our next cohort of the Digital Sandbox Pilot would focus on sustainability and climate change. We have begun work with the City of London Corporation and industry to help develop solutions to ESG data and disclosures issues via a digital testing environment. We are aiming for this environment to go live in Q1 2022.

5.6 Our new 'have regard' also applies more broadly to our activities, including our supervisory, enforcement and authorisations functions. As such, we have begun work to consider the most effective way of integrating net zero across these functions. This will involve:

- promoting net zero directly through dedicated policy proposals
- considering net zero in all other policy proposals
- embedding net zero across all FCA functions

5.7 We expand on this approach further in our chapter on 'Embedding climate considerations across FCA functions'.

Our research on net zero

5.8 The remainder of this chapter explores the net zero commitments being made by UK listed companies and financial services firms, the tools and targets they are using to fulfil these commitments and the challenges they face. It also sets out our response to these activities.

5.9 To build an evidence base we engaged with UK asset managers and listed companies. We circulated a survey to asset managers asking them about their net zero activities, using the Investment Association as a conduit. We received 24 responses. We collected similar information, using public-facing disclosures, from 53 members of the Net Zero Asset Managers initiative (excluding asset managers that had responded to our survey from this exercise).

5.10 We also used TPI Management Quality data, which assesses the quality of companies' management of their greenhouse gas emissions and of risks and opportunities related to the low-carbon transition. This methodology was developed by the Transition Pathway Initiative (TPI). The TPI was created for the global investor community and to-date 108 investors globally have pledged their support, jointly representing over $29 trillion combined Assets under Management and Advice. The TPI's methodology was developed by an international group of asset owners in partnership with the Grantham Research Institute on Climate Change and the Environment at the London School of Economics (LSE), supported by data from FTSE Russell, which maintains coverage of key global indexes. The dataset ('FTSE dataset') assesses the climate change commitments and actions taken by 419 listed UK companies.

5.11 We attended 2 roundtables, organised by the Institutional Investors Group on Climate Change (IIGCC) and 100 Group, to collect further feedback from asset managers and listed companies respectively. We also spoke to a wide range of other parties, including the Net Zero Asset Managers initiative, the Net Zero Asset Owners Alliance, the Science Based Targets initiative (SBTi) and relevant trade associations. We also engaged with the COP 26 Private Finance Hub.

5.12 We reference the findings from our research and engagement throughout this chapter. Note that 'stakeholders' throughout refers to all parties from which we collected information or received feedback (asset managers, listed issuers and other stakeholders). We make it clear where there are findings which apply to some stakeholders but not others.

Commitments

5.13 UK firms and listed companies are increasingly making public commitments to align their activities with net zero. Some firms and listed companies are making individual commitments, but most are doing so by joining net zero alliances.

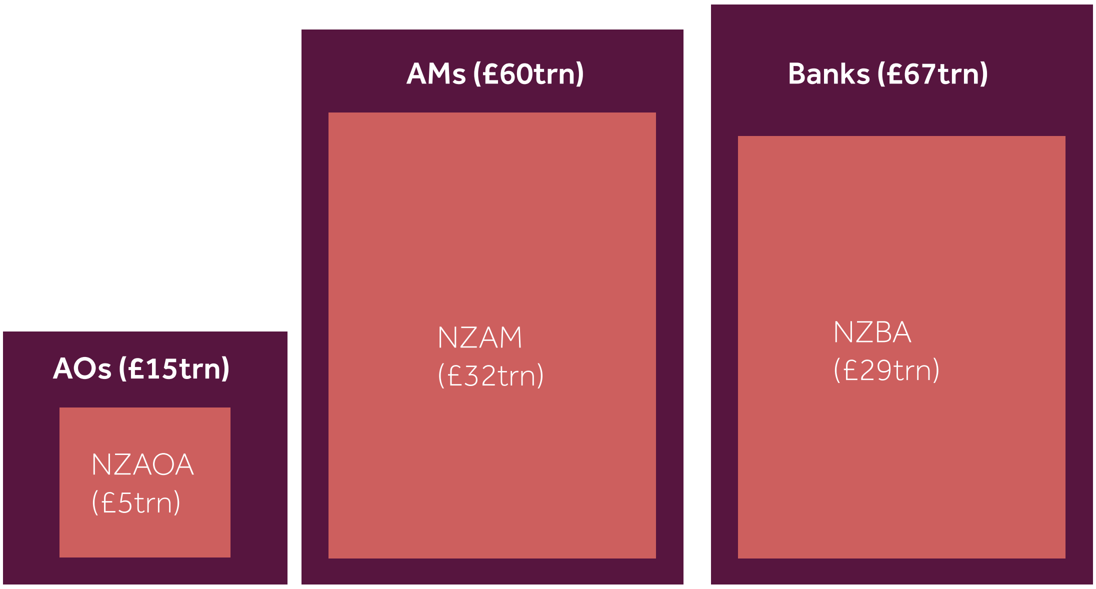
5.14 Net zero alliances are organisations helping firms and listed companies make collective commitments to align with net zero by a specific date (typically 2050) and supporting firms and listed companies in meeting them. The following alliances, each with a financial services sectoral focus, have been launched:

- Net-Zero Asset Owners Alliance (NZAOA). 49 signatories; over $7 trillion represented.
- Net-Zero Banking Alliance (NZBA). 60 signatories; $39 trillion represented.
- Net Zero Asset Managers initiative (NZAM). 128 signatories; $43 trillion represented.
- Net-Zero Insurance Alliance (NZIA). 8 signatories.
- Net Zero Financial Services Providers Alliance (NZFSPA). 17 signatories.
- Net Zero Investment Consultants Initiative (NZICI). 12 signatories; $10 trillion assets under advice.

Assets represented

5.15 The assets represented by the alliances are both substantial and growing. As set out in the diagram below, for the asset owner, asset manager and banking communities, the alliance assets also represent a significant share of total sectoral assets.

Figure 4: Assets represented by alliances (NZAOA, NZAM and NZBA) vs assets represented by top 100 firms in sector (asset owners, asset managers, banks)



5.16 Net zero alliances share several common characteristics. One is the significant proportion of their sector's total assets that are represented by their members, as illustrated in Figure 4. Additionally, the alliances tend to have been recently established, to emphasise public disclosure (eg signatory names and commitment statements) and to be convened by international bodies. The above alliances are convened by parties such as the United Nations Environment Programme Finance Initiative (UNEP FI), Principles for Responsible Investment (PRI) or IIGCC.

5.17 Stakeholders also referenced other alliances and initiatives, notably umbrella organisations such as the UN Race to Zero initiative and Glasgow Financial Alliance for Net Zero (GFANZ), chaired by Mark Carney. Both organisations aim to coordinate the work of more sector-specific alliances, with GFANZ uniting the different alliances that are in the Race to Zero campaign. GFANZ currently has over 250 members, representing assets in excess of $88 trillion.

5.18 Stakeholders were extremely positive about the role of the alliances in supporting the transition to net zero. Specifically, stakeholders mentioned the importance of the alliances in:

- Motivating firms and listed companies to begin the process of net zero alignment.
- Providing legitimacy and comfort to firms and listed companies through a supportive, collective approach.
- Disseminating useful materials to firms and listed companies, such as target-setting protocols.
- Encouraging information-sharing between signatories, including around addressing challenges. This was seen as particularly important in supporting resource-constrained or smaller firms.

5.19 UK listed companies are increasingly making climate change commitments, including some which are making commitments on net zero specifically. Of the 419 companies in the FTSE dataset, 97% have acknowledged climate change as a significant issue for their business and 91% have a policy or equivalent commitment to action on climate change. The listed companies we spoke to mentioned the importance of the alliances in making commitments, but also in building momentum around net zero alignment more generally.

5.20 The prominence of the alliances was also reflected in the results from our survey of asset managers. Respondents who had made a climate change commitment were most likely to have made a net zero commitment by joining an alliance (75%), with NZAM (71%) and NZAOA (17%) most frequently mentioned. Some respondents are members of both.

5.21 The overwhelmingly positive feedback on the role of these alliances, combined with these findings, suggests that they play a key role in helping firms and listed companies make and meet net zero commitments.

Targets and tools

5.22 To help meet their net zero commitments, many firms and listed companies are setting net zero targets and using dedicated net zero tools.

Net zero targets

5.23 Net zero targets help firms and listed companies measure their progress towards meeting their commitments. They provide a more granular level of detail, for example by committing a firm or listed company to reducing its carbon intensity by a given amount by 2030. The net zero alliances require signatories to set targets and some also produce target-setting protocols. These explicitly set out how members are expected to set targets, including guidance on the scope of emissions to be covered and recommended methodologies.

5.24 The alliances also encourage signatories to publicly disclose and report against their targets on a regular basis. NZAOA maintains a database of such targets. For example, this contains the interim targets set by Aviva in line with its overall commitment to reaching net zero by 2040, including divestment from all companies making more than 5% of their revenue from thermal coal by 2022, unless they have signed up to SBTi.

5.25 SBTi is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). It aims to increase the number of organisations acting on climate change – including by setting net zero commitments – by helping organisations set science-based emissions reductions targets and independently validating these targets. SBTi also hosts a database of targets set by firms and other organisations on its website.

5.26 Stakeholders we spoke to emphasised the important role SBTi plays in providing accountability and transparency around net zero targets. Several asset managers responding to our survey have committed to allowing SBTi to independently verify the targets they have set.

5.27 More broadly, in our research and stakeholder engagement on targets we were keen to get answers to the following questions:

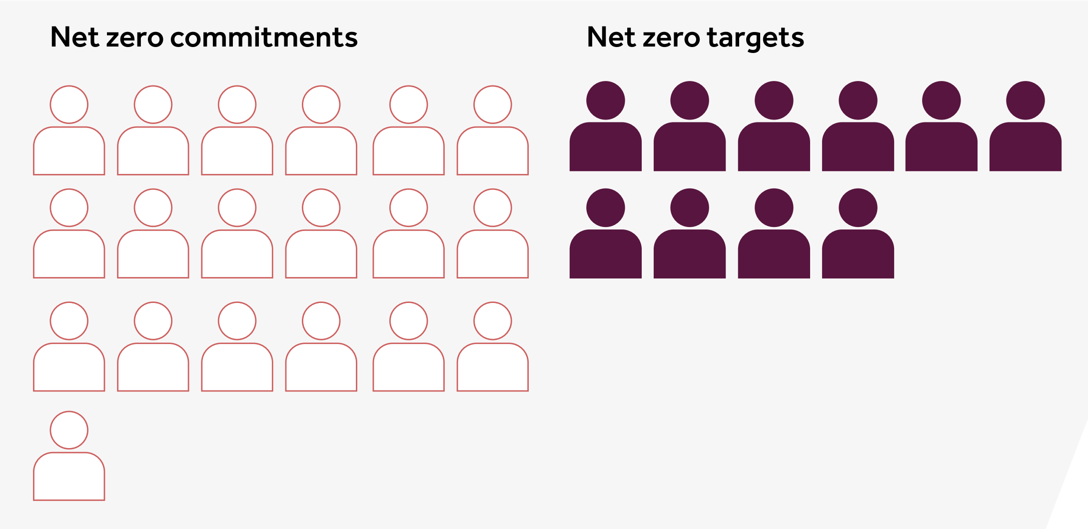
- how important are targets?
- are firms facing challenges around setting targets?
- how many firms are setting targets?
- what is the granularity and scope of these targets?
- are firms incorporating their targets into broader net zero strategies?

5.28 All the stakeholders we spoke to stressed the importance of setting targets when making net zero commitments. Stakeholders gave different reasons for this. For example, one listed company noted that setting targets increased consumer confidence in the net zero commitments made by companies. Another stakeholder felt that setting net zero targets helped bolster the credibility of their climate strategy. Stakeholders also mentioned several challenges around target-setting. These are explored in the 'Challenges' section below.

5.29 While stakeholders stressed the importance of setting targets, data from our asset managers survey and the FTSE dataset suggest that most asset managers and listed companies making net zero commitments have not yet set targets. 75% of the asset managers we surveyed had made a net zero commitment, but only 38% had set a target. 91% of companies in the FTSE dataset have committed to taking action on climate change, while only 30% have set a long-term quantitative target for reducing their greenhouse gas emissions.

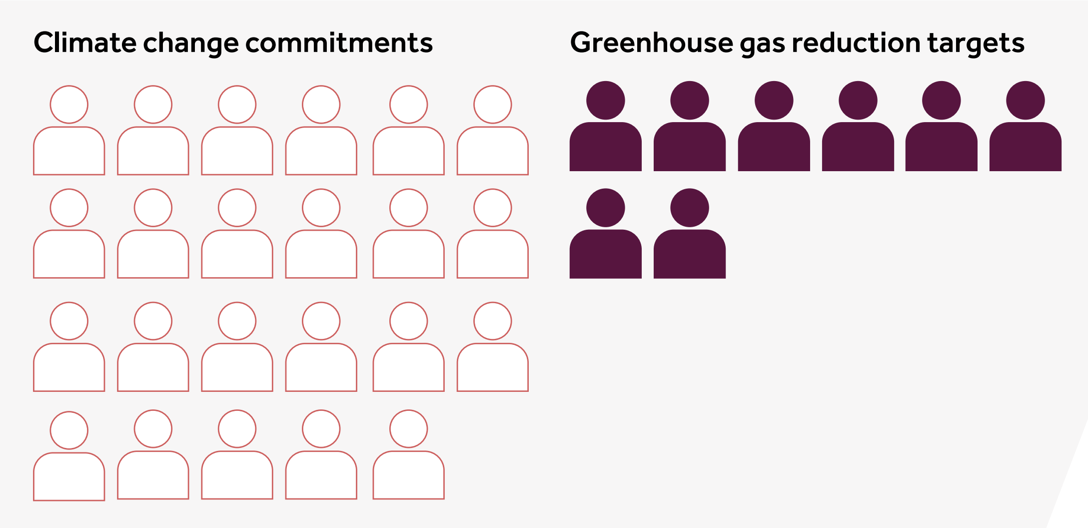
5.30 Even fewer asset managers are publicly disclosing targets. Of the NZAM members on which we collected publicly available information – all of which have made a net zero commitment by joining the alliance – only 30% have publicly disclosed 1 or more targets. ClientEarth has found that 51% of FTSE 100 companies make a 'clear reference to a 'net-zero' or 'Paris-aligned' objective [ie target] in their Annual Report', but only 18% of the FTSE 250 companies reviewed do so.

Figure 5: Number of asset managers publicly disclosing net zero commitments (first column) vs number of asset managers publicly disclosing net zero targets (second column)



Source: NZAM

Figure 6: Number of listed companies publicly disclosing climate change commitments (first column) vs number of listed companies publicly disclosing greenhouse gas reduction targets (second column)



Source: FTSE dataset

5.31 Our analysis also highlighted several secondary findings for asset managers and listed companies:

Issue	Asset managers	Listed companies
Variation in target scope	Significant variation in target Scope (1, 2 or 3 emissions)	Preference for disclosure of targets covering Scope 1 and 2 rather than 3 (39% of companies)
Low levels of independent validation	Low levels (9% of firms on which we collected data) of independent validation of targets by a third party such as SBTi or auditor	Less than half (39%) of listed companies sampled have had their operational greenhouse gas emissions data independently verified
Variation in strategic disclosures	Inconsistent disclosure of net zero strategies (incorporating targets) explaining implications for: • governance arrangements • investor stewardship processes • product offerings • asset allocation and divestment decisions	Only 12% of listed companies sampled incorporate climate change risks and opportunities into their strategy. However, most had nominated a board member or board committee with explicit responsibility for oversight of their climate change policy.

Tools

5.32 Net zero tools help firms and listed companies align their activities with net zero. Many of the stakeholders we spoke to have begun using such tools, with the TPI tool and the IIGCC Net Zero Investment Framework among the most frequently mentioned.

5.33 The TPI tool is a data resource allowing investors to make judgements on the preparedness of listed companies for the transition to net zero. The tool categorises companies (415 companies available on the TPI website) into different 'levels' according to their management of their greenhouse gas emissions and of risks and opportunities to the transition to net zero. It also assesses companies against a range of criteria, such as whether climate change has been acknowledged as a significant issue for the business. Investors can use this information to help inform their asset allocation decisions and approach to investor stewardship.

5.34 The IIGCC Net Zero Investment Framework helps investors produce a net zero investment strategy. The Framework consists of a series of recommendations, including publishing a clear action plan with information on governance, strategy, metrics and targets, and management of achieving alignment to net zero. The Framework also suggests implementing an engagement goal to ensure at least 70% of financed emissions in material sectors are either net zero, aligned to a net zero pathway, or the subject of direct or collective engagement and stewardship actions. The recommendations are intended to inform the investor's approach to translating net zero commitments into tangible action.

5.35 Other tools mentioned by stakeholders included:

- Climate Action 100+ Net Zero Company Benchmark.
- UN Principles for Responsible Investment tools
- Partnership for Carbon Accounting Financials standard

Challenges

5.36 In our research and stakeholder engagement we wanted to understand the challenges firms and listed companies are facing in setting and meeting net zero commitments. Some of the challenges highlighted are relevant to both listed companies and asset managers, while others are more specific.

5.37 The most commonly cited challenges relevant to both asset managers and listed companies were:

- **Data and information.** This was the most commonly cited problem among both groups. For example, asset managers raised concerns over the cost and quality of data used to track progress towards meeting commitments, as well as the perceived lack of information investee companies make available. Listed companies highlighted the difficulty of fulfilling investor information requests without common standards around data collection and provision.

- **Targets, metrics and methodologies.** Both groups cited a broad range of issues about the targets, metrics and methodologies used to assess net zero alignment. Some stakeholders were confused over the most appropriate targets to use, especially where there were a number of similar targets. Stakeholders also felt confused where multiple methodologies are available for the same targets or metrics. They considered that a global standard could help address this problem.

  Other stakeholders highlighted quality issues over 'forward-looking' metrics such as the implied temperature rise associated with a portfolio. Some stakeholders considered these targets too simplistic to be meaningful, while other were concerned with the methodologies used and whether they produce accurate results.

- **Impact on business relationships.** Some asset managers and listed companies felt that entity-level net zero commitments could potentially conflict with their business relationships. Some asset managers were concerned that net zero commitments would force them to reduce their exposure to certain asset classes, which could conflict with client instructions to invest in these assets. One stakeholder also asked for regulatory guidance over changing client discretionary mandates to reflect entity-level net zero commitments. The guidance they sought would state that making such changes would not be considered material or would automatically be deemed to be in the best interests of clients. The stakeholder believed that this would give investors more flexibility – and allow them to act faster – in aligning client portfolios with net zero.

  Listed companies raised similar concerns about relationships with supply chain partners. Specific challenges included ensuring that partners are also transitioning, while being unable to assess their progress due to a lack of data.

- **Interaction with public policy**. Both asset managers and listed companies stressed the importance of a 'whole economy' transition, stimulated by public policy changes, in helping firms meet their commitments. For example, several firms raised the importance of policy work to improve green retrofitting in the UK real estate sector. Without this work, stakeholders were pessimistic about the possibility of firms invested in this sector being able to meet their net zero commitments.

- **Divestment versus engagement.** Both asset managers and listed companies noted the pressure faced by investors to disinvest in companies not perceived as transitioning to net zero quickly enough, rather than helping companies transition through investor stewardship activities.

5.38 Stakeholders highlighted several other challenges. Both asset managers and listed companies noted the difficulty of transitioning parts of their businesses based in jurisdictions less receptive to the transition. Other challenges included capacity and resourcing.

5.39 We also heard several challenges specific to asset managers or listed issuers. Challenges specific to asset managers included:

- Difficulties in developing net zero-branded products without clear standards.
- Perceived lack of client understanding around terms such as net zero.
- Potential legal issues, including over client mandates (see the third bullet point above).
- Perceived regulatory challenges over categorisation of products and lack of regulatory harmonisation on net zero. Asset managers said this problem was made worse by a lack of regulatory guidance to promote consistency and comparability in how companies set and disclose on net zero strategies and transition plans.

5.40 Challenges specific to listed companies included:

- difficulties in reducing heating and transport-related emissions
- slow development of carbon capture technologies, which some stakeholders saw as important to meeting commitments.

Our response

Challenges

We recognise that firms and listed companies are facing challenges around making and meeting net zero commitments. Our response to these is as follows:

Data and information. We understand the challenges faced by some firms and listed companies around accessing high-quality climate data, and the importance of this data in measuring progress against net zero targets.

We were encouraged to hear from stakeholders that the alliances are helping to overcome this issue by acting as platforms where signatories can share information with each other. There are also a number of other initiatives in this area which will help, including:

- Our recent consultations on extending the scope of our TCFD-aligned rules for listed issuers and introducing TCFD-aligned rules for asset managers, insurance companies and FCA-regulated pensions schemes. Our final rules will help increase the amount and quality of climate data available to firms.
- Our work co-chairing the IOSCO sustainability disclosures workstream. The workstream aims to harmonise international

sustainability disclosure standards and is engaged with the IFRS Foundation's work to develop an ISSB.
- As co-chair of the CFRF, we have steered the CFRF's cross-cutting workstream on climate data and metrics, the outputs of which were published in October 2021.
- We announced at Innovate UK FinTech Week that our next cohort of the Digital Sandbox Pilot would focus on sustainability and climate change. In partnership with the City of London Corporation and industry we have identified use cases on ESG data and disclosures that we will help innovators develop solutions for by giving them a digital testing environment. We will work with successful applicants from November ahead of the testing environment going live in Q1 2022.

Targets, metrics and methodologies. We recognise the challenges faced by firms and listed companies. This is a nascent space and in time, we expect the resources channelled by signatories and other partners into the areas of targets, metrics and methodologies to deliver increased clarity. International organisations such as IOSCO have an important role in encouraging progress towards common global standards.

The target-setting protocols produced by the alliances are an important tool in helping spread best practice around targets, metrics and methodologies. For example, the NZAOA protocol references resources on appropriate portfolio alignment methodologies. We also welcome the work of organisations such as SBTi in helping organisations set appropriate targets and providing independent verification of these targets.

Impact on business relationships. We recognise the uncertainty stakeholders have highlighted around how net zero commitments interact with business relationships. Policy announcements, such as the UK Government's target of net zero by 2050, can help reduce uncertainties around net zero by signalling the direction of travel to business. The Government's target was welcomed by the Confederation of British Industry (CBI), which noted that 'UK business stands squarely behind the Government's commitment to achieve Net Zero emissions by 2050. This legislation is the right response to the global climate crisis, and firms are ready to play their part in combatting it.'

To address the perceived risk of conflict between client demands and entity-level commitments, asset managers should proactively engage with their clients to ensure they understand the commitments and how these will affect them. Listed companies should likewise proactively engage with clients, customers and suppliers to set out the implications for their relationships.

Interaction with public policy. We know that firms and listed companies will need to consider potential future public policy decisions in making net zero commitments. We have begun the process of incorporating consideration of net zero into our own policy work, as we integrate our new net zero 'have regard' across our functions. We also encourage firms and listed companies to clearly set out, alongside their commitments, the extent to which meeting these depends on action by others (see paragraph 5.43).

Divestment versus stewardship. Asset managers have 2 important roles to play in the transition to net zero. Firstly, they must be able to effectively allocate capital to 'green' companies that have already implemented sustainable business practices and are actively supporting the transition to net zero.

Secondly, asset managers must be able to allocate capital to companies transitioning to more sustainable practices, to fund their transitions. Asset managers must also be able to engage with these companies through investor stewardship activities. This second function is especially important to ensure that these 'brown' companies can transition to becoming 'green' – the UK will otherwise be unable to meet its net zero commitment.

We note the comments asset managers made about narrow regulatory definitions and product labels. We will take this into consideration as we develop our regulatory programme in this area.

We also note the comment from firms about the importance of regulatory harmonisation on net zero. Our introduction of TCFD-aligned rules for listed issuers and regulated firms is intended to promote regulatory harmonisation through standardised disclosures using a global standard. We are currently considering the feedback to our consultation on TCFD-aligned rules for firms, including elements relating to net zero. We will provide details on our approach in our Policy Statement later this year.

Firm and listed company activities

5.41 Both asset managers and listed companies have a key role to play in achieving the transition to net zero. We are therefore encouraged to see them proactively aligning their activities with net zero, by making net zero commitments and setting targets.

5.42 Through our research and stakeholder engagement we have also identified some potential areas of concern. For example, we note the relatively small proportion of asset managers committed to reaching net zero that have set clear targets to achieve this goal. Although we understand that some of the net zero alliances operate a grace period between joining the alliance and setting targets, which may explain this divergence, several stakeholders noted the importance of setting targets in the first instance to support signatories in meeting their commitments. Stakeholders also noted that setting targets increases the credibility of firm commitments, helping avoid accusations of greenwashing.

5.43 To address these issues, support stakeholders in making and meeting commitments, and ensure that consumers are protected, we have set out the following principles for net zero commitments which firms and listed companies can consider. We will consider these in our conversations with firms and listed companies more generally.

- **Appropriate.** Firms and listed companies should set net zero commitments and targets that are appropriate to their business models. These should be supported by suitable resourcing and governance arrangements.
- **Achievable.** Firms and listed companies should set net zero commitments and targets that are realistic and feasible. Consumers and investors will benefit from understanding to what extent commitments are dependent on movement by others, future technological developments such as widespread availability of carbon-capture technologies or future policy actions. While we understand the need for firms and listed companies to factor certain assumptions about future direction of travel into their commitments, consumers may question the feasibility of firms and listed companies meeting commitments that are overly reliant on actions by other parties. These issues can be explored further in firms' and listed companies' transition plans and/or net zero strategies.
- **Accountable.** Firms and listed companies will benefit from putting in place net zero targets to measure progress against their commitments. This is in line with the guidance produced by the net zero alliances, which requires signatories to set and publicly disclose targets. Signatories can use the target-setting protocols provided by the alliances, which emphasise the importance of science-based metrics, in doing so. These protocols also emphasise the importance of providing information on the Scope of emissions covered (Scope 1, 2 and 3), publicly disclosing targets and reporting against these on a regular basis. Using third-party verification services such as SBTi may also improve the credibility of targets.

6 Capital mobilisation

The need for efficient capital allocation

6.1 Financial services have a central role to play in the transition to net zero and adaptation as they help capital owners choose suitable investments. Providers of financial services guide these choices by supplying appropriate information to investors. Consequently, the providers have a chance to channel the funds towards the green initiatives, not only enabling the UK to meet its net zero target, but also allocating capital efficiently to businesses that are adapting well to climate change. The financial system also needs to help and supervise emissions-intensive sectors by providing finance and risk management solutions which support firms in amending their business models in a way that aligns with transition.

6.2 Providers of financial services sit at a unique junction between the real economy and investment ideas. The investments affect the characteristics and performance of the real economy in the future, further influencing society and the environment. We recognise that it is critical for us to understand these complex systems that have direct and indirect transmission mechanisms. Such understanding enables us to perform our central functions: track key developments in climate change adaptation and transition across various sectors, identify the risks of harm arising in the financial services sector and mitigate the risks.

6.3 Substantial investment is needed in the next decade in order to reach the 2050 net zero target efficiently and to improve adaptability of the UK economy to climate change. However, the amount and timing of required investment differs across sectors. The Climate Change Committee (CCC) and PwC have published estimates of the real economy investment required to reach net zero. The necessary investment climbs steadily over the next decade, reaching a required level of £40–50bn per annum from 2030. This shift comprises approximately 10-15% of current economy-wide investment (of c. £400bn per year).

6.4 The table below provides estimates of the annual levels of investment required across selected sectors. While these figures are inherently uncertain as they are based on defining assumptions, they illustrate the investment levels which different sectors need to reach net zero by 2050.

Sector	Necessary Investment (£bn/annum)	Peak Investment Year
Electricity Production	15	2034
Residential Buildings	12	2028
Transport	11	2040
Fuel Supply	3	2048

Source: Climate Change Committee.

6.5 Successful UK transition requires significant Government — and potentially regulatory — interventions on a sector-by-sector basis. Significant decisions and policy actions are planned and already being undertaken as outlined in The Ten Point Plan for a Green Industrial Revolution published by the Government in 2020. Some areas which are salient for us include:

- **Transport decarbonisation plan:** Switching towards electric vehicles on a wide scale is a challenge. It requires careful management of incentives (such as the Government's funding to keep plug-in vehicle grants), regulations, subsidies, and investment in charging infrastructure. The Government's involvement in these areas is already substantial, as announced in the 2020 and 2021 Budgets. Financing of the transition will also be provided in large part by consumers and the car finance industry. The Finance & Leasing Association and other financial services stakeholders are already engaged in evolving issues, such as the prospective update to the Consumer Credit Act and roll out of green finance.
- **The energy sector:** The decisions about the further course of greening the energy system and the investment in infrastructure will have a significant impact both on financing and the pace of emissions mitigation. Despite its advances in decarbonisation, driven mostly by falling coal power generation, energy supply was the second biggest greenhouse gases emitter in the UK in 2019. The impact of various public greening initiatives, such as the Clean Growth Fund by BEIS, will also affect the financial services industry.
- **Heat and buildings strategy:** The UK needs a robust strategy to ensure that the residential sector transitions from gas-fired heating to electrical technologies such as heat pumps and potentially hydrogen-based heating. The Government's policy package of regulations, incentives/subsidies and funding, such as the Low Carbon Heat Support Scheme, Green Gas Levy, or Green Heat Networks Fund announced in the 2020 Budget, can help drive this shift.
- **Carbon pricing and incentives:** In order to "hold the global temperature rise to well below 2 degrees and pursue best efforts to limit the increase to 1.5°C", consistent with the UK's Nationally Determined Contribution under the Paris Climate Agreement, carbon emissions should be suitably costly. In the 2017 Report of the High-level Commission on Carbon Prices, led by Joseph Stiglitz and Nicholas Stern, the estimated optimal price of carbon allowing for a cost-effective mitigation of the rise in global temperatures to 2 degrees was at the level of £35–70/tCO2. However, with the increase of climate ambitions since the report was published, the top of that range would be most relevant. The new UK Emissions Trading Scheme (ETS), launched in 2021, will need to be carefully managed to ensure a suitably high and stable carbon price which will provide investors with sufficient certainty about their green portfolios. In the future, the UK ETS could potentially extend to new sectors, such as the basic materials sector, to discourage carbon emissions across the economy. Similarly, a carbon Contracts for Difference (CFD) scheme would induce investments in green projects. Currently, CFDs work in the electricity generation sector in the UK by providing a pre-agreed price for the low carbon electricity produced for the duration of the contract. However, project-based carbon CFDs could also help the transition to low carbon production in other industries.
- **Industrial decarbonisation strategy:** The strategy for achieving the decarbonisation of industry will involve a large number of listed entities and mobilise capital for developing and implementing new solutions, such as Carbon Capture, Usage, and Storage. The industry transition will be aided by a policy package mix, which could involve the following elements in the basic materials sector:

- carbon pricing providing appropriate carbon-reducing incentives along the value chain
- climate contribution or another form of carbon border adjustment mechanism to contain the so-called carbon leakage (occurring when emissions-intensive economic activity transfers to other countries with laxer carbon constraints) and protect the competitiveness of the domestic industry
- CFDs to reduce uncertainty for investors in green projects
- green public procurement to allow 'local, regional, and national authorities to use their spending power when purchasing infrastructure or buildings to create lead markets for low-carbon practices and design'
- product carbon requirements which could potentially ban the sale of products consisting of materials produced with carbon-intensive processes

6.6 The scale of the transition and the effect of these interventions will create significant changes to markets, business models and revenue streams. If investment levels lag behind targets, transition risks will increase, along with the danger of failing to deliver net zero by 2050. Moreover, a smooth net zero transition might be jeopardised by a range of adverse outcomes, such as:

- Value destruction through 'unnecessarily' **stranded assets** – this could occur when asset managers or owners have unrealistically optimistic expectations about the future economic viability of carbon-intense activities. Consequently, they might keep a significant share of their investment portfolios exposed to a potentially abrupt decrease in value. This is avoidable if stakeholders are well informed and understand the transition risks of carbon exposure in the future.
- Emergence of **'green' bubbles**, ie market events in which the price of a given asset deemed green rapidly increases to an unsustainably high level, soon followed by a rapid decrease. This may occur when investors have imperfect information about the asset and so may misprice it relative to its fundamentals, or if there is a shortage of genuine 'green' projects that lead demand for such investments to exceed their supply, and the possible need for immediate and fiscally costly policy intervention.

6.7 These could lead to harm to consumers and to market integrity. It is important that the financial services sector can efficiently and accurately match capital with the needs of a climate-resilient real economy.

Why capital may not be allocated efficiently

6.8 Allocating investments to green initiatives requires decisions by several market participants along the investment chain. Current market failures and barriers to the flow of funds may inhibit the financing of green initiatives and exacerbate existing frictions.

6.9 Factors that may affect the allocation of capital throughout the investment chain include:

6.10 **Negative externalities:** Investing into some projects may lead to higher carbon emissions with adverse impact on the UK's net zero target. Asset prices in financial markets may not fully incorporate the social and climate costs from the broader impact investments have on the environment. The absence of information about the environmental impacts of the investment, and a currently relatively weak carbon price signal, may cause financial flows to be disproportionately allocated to carbon intensive industries. Internalising the social costs of investments into financial markets will improve the efficiency and accuracy of asset prices, better reflecting longer-term climate risks of investment products.

6.11 **Policy uncertainty:** Uncertainty makes it difficult for risk-averse investors to gauge the medium to long-term prospects of investment opportunities. This inhibits financial flows into otherwise attractive initiatives and may lead to under-investment in green initiatives.

6.12 **Misaligned incentives:** Motivations may vary between different types of market participants, such as retail investors, financial advisors, insurers, and fund managers. This may lead to inconsistent allocations as funds flow through the investment chain. For example, financial advisors acting in the best financial interests of their customers may avoid advising that money be placed in green investments if they do not meet the customer's risk profile, desired maturity or can be expected to deliver lower returns. Furthermore, as the 2dii and The Generation Foundation reported in 2017, mismatching of time horizons between different market participants is a challenge. In theory, the patient investor should be rewarded – investors with long-term prospects (eg 15 - 30 years) should be able to invest in illiquid and more risky assets and wait for the right moment in the business cycle to sell them. This enables them to achieve better returns than short-term strategies. However, research suggests that the long-term investment horizon that could be adopted can be undermined by fund managers pursuing short-term objectives based on benchmarks (with the report pointing out that 90% of equity managers turn their portfolio in less than 3 years). The Generation Foundation finds that 'as a consequence, for liquid assets, there is no demand for long-term risk analysis… This short-term focus in turn reduces the horizon of non-financial companies.' This highlights the systemic issue of short-termism, which is adversely affecting the volume of investment-ready patient capital in the economy. In fact, it is likely in the best financial interests of market participants across the investment chain to incorporate longer-term climate risks into their investment decision-making.

6.13 **Information inadequacies:** Investors may find the decision-useful information on climate-related risks either unavailable or difficult to process and understand. This asymmetry of information limits market participants' ability to accurately analyse environmental considerations and factor them into their investment choices. Investors with a preference for 'green' projects may find it challenging to correctly identify them and distinguish them from carbon-intensive options.

6.14 **Behavioural biases and decision-making considerations:** Behavioural inertia can drive a preference for remaining in tried and trusted investments (ie the status quo). Similarly, a lack of confidence in being able to assess and act on relevant information can inhibit the uptake of sustainable finance. Both these issues may slow down the flow of funds to 'green' initiatives.

6.15 These market failures can occur throughout the investment chain, distorting the efficient allocation of capital by all types of investors. For example:

- **Retail investors** are developing preferences about where and how their money is invested. Lack of ESG expertise is a hindrance to some of the largest investment advisors. So complex jargon, opaque information and the inability to separate out the 'E' from ESG metrics and considerations compound to act as a barrier to retail investors' adopting climate-friendly investment practices. Consumers' decisions may also be affected by information asymmetry as well as behavioural and decision-making biases, as discussed later in this chapter.

- **Insurers** consider a relatively long-term horizon when planning their business. And, as the PRA found in its first Climate Change Adaptation Report in 2015, the challenges stemming from climate change are central to their business plans and sustainability. Given their broader exposure to climate change, insurers may be more risk averse in the way they manage and allocate funds. Consequently, they might prefer tried and trusted assets for their portfolios. Participants can also disengage from assets exposed to physical risks, as home insurers did for flood and wildfire insurance, for example in California. The probability of 'extreme but plausible' scenarios will be gradually revised upwards in the 'value at risk' (VAR) calculations, strengthening the disengagement behaviour. Another potential risk here, as the Green Climate Fund suggests, might arise from 'a few destructive events affecting key economic hubs or revisions of technological expectations (eg negative surprises about low-carbon options or a drop in fossil fuel prices)'. This 'could trigger a sudden spike in risk aversion, and it might be difficult to restructure the portfolios in a short time'. Such a scenario would be more likely when balance sheets are already stressed and the levels of corporate and municipal debt are high. This could be avoided if the VAR calculations led to a swift readjustment of financiers' choices.
- Some **pension** trustees may be conservative and cautious in their management of investments. In doing so, they may focus on shorter-term quantifiable aspects of investments in fulfilling their duties and less so on climate-related dimensions. As some in the pensions industry argue, better availability of data would 'allow managers to better understand the financial impact climate-related risks and opportunities', thereby encouraging pension funds to incorporate climate issues into their investment strategies. Fiduciary managers also have a role to play here in engaging with and holding managed funds accountable. The Pensions Schemes Act is an important push towards consistent consideration of the effects of climate change in funds' portfolios.
- **Asset managers**, when allocating funds to investments, are constrained by their investment mandate. Their decision-making incorporates factors such as perceived risk, expected return and the duration of investments. If climate considerations are not pre-determined within managers' mandates or tend to require continuous, long-term investment strategies, this may make them less likely to be included within investment portfolios. Research from KPMG in 2020 suggests that a lack of decision-useful ESG data is one of the biggest barriers to sustainable investing practices. This represents an information failure. Climate-related financial disclosures will play an important role in helping asset managers to mitigate the harms of investment short-termism by accurately reflecting longer-term climate risks of certain investments. This should lead to more accurate asset pricing and provide a push for sustainable financial products to be included in various investment portfolios.

6.16 By identifying and tackling the impact of market failures on different market participants, the flow of funds can be aligned to help meet the target of net zero by 2050, as well as mitigating transition risks.

Capital flows as part of a broader system

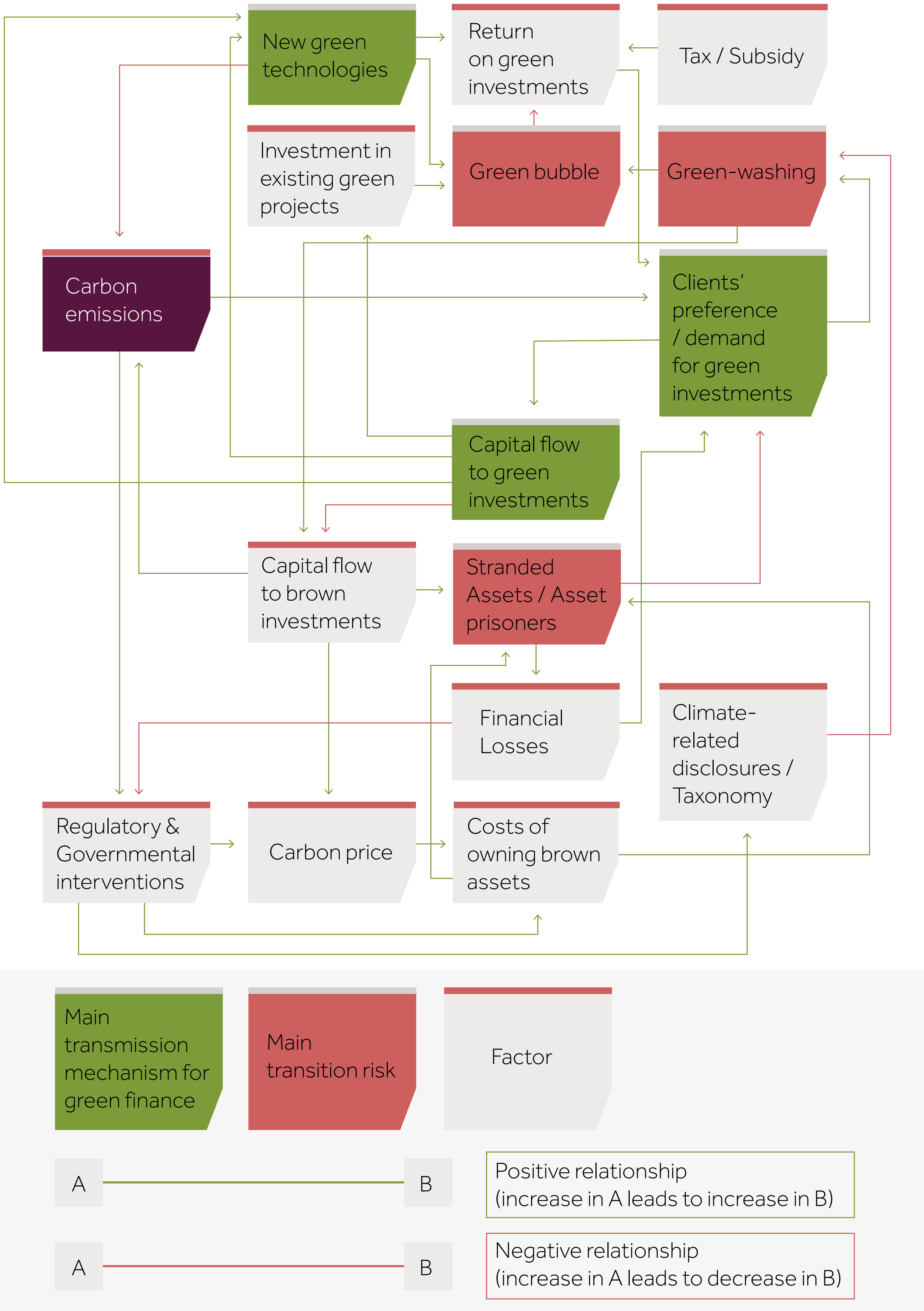
6.17 While this chapter has focused on the allocation of capital to green initiatives, climate change presents a unique regulatory challenge that will affect participants across all the sectors we regulate.

6.18 We consistently pursue an outcomes-focused approach in our regulatory role. Outcomes-based regulation requires us to match regulatory tools to desired end-states for consumers and markets. A change in one area of financial services intended to improve a given issue may have a consequential effect on another area. Likewise, the growth of sustainable finance is likely to change market dynamics across all financial services (the 'system').

6.19 Systems thinking is a diagnostic toolbox that allows us to examine the financial system holistically and identify how its different components are interrelated. Analysing knock-on, indirect effects can be vital in understanding the impact of policy changes on meeting the range of financing needs, from infrastructure investment to green bonds. To identify these effects, we use causal loop diagrams, which present a concise model of the complex financial system overlaid on the real economy and green capital flows.

6.20 The causal loop diagram below illustrates this. The various nodes either positively (green arrow) or negatively (red arrow) affect other variables within the system. These can create reinforcing (perpetuating an impact) or balancing (offsetting an impact) loops. This can help understanding of transmission mechanisms, interdependencies and leverage points within the system. Overall, this diagram captures the high-level drivers of green financial flows and illustrates how and why transition risks (eg green bubbles, stranded assets) might materialise. By better understanding these dynamics we will be able to manage frictions to green investment whilst understanding the risks that the transition to net zero presents financial services.

Figure 7: Causal loop diagram for green financial flows.



6.21 Developing a clear understanding of knock-on effects and market dynamics across the financial system help us to identify and prioritise the best points of leverage to create long-term solutions to existing problems. By being aware of how the choices we make will have an impact on other parts of financial services and anticipating these we can better ensure our desired outcomes are obtained. For instance:

- An increased flow of capital to green investments leads to a greater volume of these investments, providing more support for green technological innovation. In the future, this could potentially increase the rate of return on green assets relative to 'brown' assets. That in turn would again increase the flow of capital to green investments, creating a reinforcing feedback loop as a result.
- Alternatively, an increased flow of capital to green initiatives would inflate the value of available green investments. This, in turn, would encourage greenwashing and contribute to green bubbles, weakening consumers' and institutional investors' appetite for green investments. This would consequently create a balancing feedback loop.

Capital market solutions

6.22 Private finance plays an important role in providing the funding to decarbonise the UK economy. Wholesale markets channel private and public funds and provide market participants and corporates with crucial services to manage the transition to net zero:

- Primary markets are an important avenue to finance private and public initiatives to green the economy.
- Markets translate policy signals into pricing signals that, in turn, may incentivise positive behaviours. This happens either via dedicated markets such as the UK Emission Trading Scheme or through other price discovery mechanisms in securities markets.
- Wholesale markets, including OTC derivatives and commodity markets, enable risk transfer and hedging which helps market participants, including corporates in the real economy, to adapt to and mitigate climate risks.

Primary markets and funding net zero

6.23 Companies will need a significant amount of financing to support their transition to net zero. While conventional equity and debt instruments may be used to finance this investment, industry has also looked at innovative solutions to support companies in their transitions.

State of the market

6.24 The issuance of green, social and sustainable bonds ('ESG bonds') has been an area of significant growth in securities markets. Since the first green bond issuance by the European Investment Bank in 2007, the market has grown to a cumulative issuance in excess of USD 1 trillion. Sustainable finance bonds made up around 10% of global issuance in the first half of 2021. The coronavirus crisis also shifted the dial significantly on the issuance on social bonds, which increased 700% to $147bn in 2020, partly driven by issuance under the EU SURE framework.

6.25 Beyond ESG bonds, we have seen a trend for issuers to issue more ESG-aligned securities. This includes securitisations, where European issuance has reached over €5 billion in H1 2021, with the UK accounting for more than half. Equity markets are also increasingly looking to support sustainable companies. H1 2021 saw global issuance of $23 billion for companies operating in sustainable sectors, setting another all-time record.

UK green gilts

6.26 In November 2020, the Chancellor announced the UK's intention to issue Green Gilts to support the transition of the UK economy to net zero. The UK Debt Management Office (DMO) committed to offer at least £15bn in Green Gilts to the market over the 2021/22 financial year. In September 2021, the DMO issued the first UK green gilt raising £10 billion. The transaction was the largest inaugural green issuance by any sovereign with the largest ever order book for a sovereign green transaction at the time of issuance.

6.27 The development of a green sovereign issuance programme has often created the framework to further support the domestic green finance market. In response to the Climate Bonds Initiative's first Sovereign Green, Social and Sustainable Bond Survey, sovereign issuers identified 5 ways that their own issuance supported local market growth: i) attracting new investors; ii) creating space for other issuers by supporting the local green bond market; iii) establishing best practice with a blueprint for disclosure; iv) provision of a reference benchmark; and v) highlighting the priorities of government. Analysis by NatWest showed the 'knock-on effect' of sovereign issuance on a country's wider sustainable bond market.

6.28 In CP21/18, we included a discussion chapter covering topics looking at the ESG bonds market. In particular the interaction between the use of proceeds and the information issuers provided in their prospectus. We are currently considering the feedback we received to that chapter.

6.29 We will also monitor the impact of the UK green gilts issuance on the wider ESG debt market by UK issuers. And we will continue to engage with issuers, advisors and investors to better understand whether the current framework for ESG bonds supports the work led by the Treasury on funding the transition to net zero.

Climate transparency and pricing

6.30 Markets can be a powerful transmission mechanism for climate policy throughout the economy. Secondary securities markets perform an important trading and price-discovery function. Specialised markets such as the UK ETS go further, and should provide better insights into the price of greenhouse gas emissions in a way that more closely reflects the societal cost of carbon emissions. Many consider that markets will only be able to channel resources efficiently to activities that reduce greenhouse gas emissions if an economy-wide price on carbon is in place at a level that reflects the true social cost of those emissions (as discussed earlier in this chapter). The UK ETS provides a venue for trading emission allowances and their derivatives and is a key element of the UK government's climate change strategy.

6.31 Emission allowances and their derivatives are financial instruments, and bidding in emission allowance auctions is a regulated activity. We are therefore responsible for the regulatory framework for these activities. This includes the rules around market abuse, conduct, systems and controls and other regulations that promote integrity of the market.

6.32 Adequate disclosures are central to capital markets working effectively and to price formation. The UK Government made implementing TCFD-aligned disclosures a key element of its 2019 Green Finance Strategy. We consider this work in more detail later in this chapter.

6.33 There are already rules in the FCA Handbook and legislation under which listed issuers, issuers with securities admitted to trading on regulated markets and other entities may already have to make a range of climate-related and broader ESG disclosures. We set out how issuers should consider existing requirements in a Technical Note in late 2020.

6.34 There are also other disclosure requirements relevant to preparers of annual financial reports. These apply to both the financial statements and the narrative content. Where material climate and wider sustainability-related matters impact the company's financial performance, it needs to disclose these.

6.35 We also note the ongoing international work to develop a common baseline for international corporate sustainability reporting under the IFRS Foundation. We are engaging closely with these proposals in our role as the co-chair of the IOSCO Sustainable Finance Taskforce, particularly the international issuer disclosures workstream.

6.36 In June 2021, IOSCO outlined its vision for the ISSB. The key aim of this work is to deliver complete, globally consistent and comparable information on climate change and other sustainability matters. This will help markets price sustainability-related risks and opportunities and support the transition to a more sustainable future.

Climate risk management & the role of derivatives

6.37 Derivatives enable investors and real economy market participants to manage risks from their exposure to assets whose value may change over time. They present a key mechanism through which participants can adapt to the risks and challenges that climate change poses. For example, commodities investors may be exposed to agricultural price movements and futures, options and swaps allow those risks to be hedged. A growing number of new products, especially commodities and their derivatives, align themselves to better sustainability outcomes.

Derivatives on sustainable commodities and traceability

6.38 There are already many commodity derivative contracts traded in the UK on physical products linked to sustainability. The London Metal Exchange (LME) lists recyclable (eg lead) and scrap (eg steel) metal contracts as well as materials for electric vehicle production (eg cobalt, copper and nickel). Across markets, and in response to further climate-based initiatives, more contracts are being launched, with growing interest in the trading of hydrogen and water.

6.39 Alongside the trading of derivatives on sustainable commodities, exchanges also play a role in setting standards for the quality of physical commodities. This can have a significant impact on the sustainability of commodities in the underlying physical markets. The LME, for example, has expanded its requirements on the physical metals that underpin its contracts to include 'responsible sourcing' elements.

ESG-related swaps

6.40 In other asset classes, there have also been initiatives linked to sustainability and risk management. Instruments such as ESG-linked interest rate swaps, for example, have started to be negotiated. These allow market participants to hedge interest rate risks but also to be incentivised for improving their sustainability credentials by, for example, baking into the contract positive or negative spreads to the fixed rate payable by the borrower based on its ESG performance.

6.41 Other examples can be found in the credit market. For instance, the iTraxx MSCI ESG Screened Europe credit default swap (CDS) index was launched in 2020. This is an exclusion-based version of the iTraxx Main index. This allows investors to gain long or short exposure to the risk and return profile of a basket of 125 of the most liquid CDS referencing underlying European investment grade bonds. This new index is designed to allow for increased opportunities to gain exposure to companies that meet specified ESG criteria within the credit market.

Other initiatives

6.42 New initiatives have also been launched to establish marketplaces and standards for the trading of voluntary carbon offsets. These allow firms to offset emissions that they cannot eliminate, by buying carbon credits or offsets on the market. The Task Force for Scaling Voluntary Carbon Markets and UK initiatives such as the UK Voluntary Carbon Markets (VCM) Forum aim to improve standards around carbon offsets trading as well as to develop a liquid derivatives market to support the wider infrastructure for such a market. The FCA sits as an observer on the UK VCM Forum.

Consumer interaction with ESG/sustainable investing

6.43 As we outlined above, it is important that investment levels meet targets in order to minimise the risk of failing to deliver net zero by 2050. The good news is that ESG and sustainability considerations are becoming more important to investors. The 2020 edition of the our Financial Lives Survey asked 1119 people about their attitudes towards responsible investing. This was a random sample of all adults weighted to the UK adult population. Those asked were adults with any retail investment, a defined contribution pension in the accumulation phase and/or who have decumulated a defined contribution pension since pension freedoms were introduced. The survey defined this as 'investing in a way that takes into account not just how companies are managed, but other issues too, from the impact they have on the environment to the role they play in society'.

6.44 The survey found widespread interest in responsible investing, but some signs of hesitancy in acting on this interest. The survey revealed 77% of respondents would like the money they invest to 'do some good' as well as providing them with a financial return, but only 10% stated they had participated in responsible investing. Furthermore, only a minority seemed prepared to take greater risk (24%) or accept greater cost (41%) in order to invest sustainably. This may reflect behavioural inertia which may lead to market failure, and could reduce the chance of delivering net zero by 2050.

6.45 However, despite these signs of potential hesitancy, there is clear increased demand for ESG investment products. In 2020, there were net flows of €233 billion into European sustainable funds, almost double the inflows in 2019, and in Q1 2021, sustainable fund assets reached €1.3 trillion.

6.46 In the UK, ESG investment funds saw net flows of £10bn in 2020 from retail investors. This is a 300% increase on the net flows recorded in 2019. By the end of December 2020, total assets in ESG portfolios stood at £45.7bn. Despite these net inflows, such investments still make up only 3% of industry funds, suggesting more can be done to translate stated preferences into actions.

6.47 To think about how we can help ensure consumers preferences and needs are met, earlier this year we conducted initial analysis to understand how different information on the degree to which a fund is ESG/sustainable may affect consumers' investment decisions. We published the results of this analysis earlier this year in an Insight article.

6.48 The experiment involved us asking participants to view pairs of simple randomly generated hypothetical fund factsheets and then choose which one, if any, they think they would invest in. We wanted to see what the effect of presenting a fund as ESG in different ways had on how likely they were to choose a fund.

6.49 We found that having ESG imagery, ESG fund descriptions, and ESG fund strategies on the factsheets had no statistically significant effect on how participants invested in our analysis setup, when compared to more neutral information.

6.50 However, we also tested what would happen if we introduced an ESG grading system. Specifically, the effect of a fund being graded as having different levels of positive ESG impact, compared to being graded as having no ESG impact at all. The way we did this was to present a 'medal', that was designed to appear to appear as a reliable, impartial, objective and salient grading of a fund's sustainability orientation. Funds would either get a 'No positive impact' grading, or a bronze, silver, or gold rating, along with a description confirming that the fund was invested in companies that have a positive ESG impact. When we compared bronze, silver, and gold medals against a 'No positive impact' medal, the probability the fund was chosen increased by 9% for the bronze medal and 13% each for the silver and gold medals. These differences were statistically significant.

6.51 Finally, we also found that participants did not respond to greenwashing in our setup. Specifically, we found that participants' investment choices are not swayed by ESG information (imagery, description, or strategy) that conflicted with the medal's grading.

6.52 While our analysis was exploratory in nature, rather than causal, it adds to the case for better ESG/sustainability-related disclosures. It also suggests there is a wider need for an environment in which market participants can manage the risks from moving to a more sustainable economy and capture opportunities to benefit consumers.

Responding to information asymmetry: Implementing TCFD

6.53 A key aim of our sustainability strategy is to improve climate-related disclosures along the investment chain.

6.54 The TCFD's recommendations provide the leading global framework for climate-related financial disclosures. It has 4 recommendations and 11 recommended disclosures across 4 pillars: governance, strategy, risk management and metrics and targets. According to the 2021 Status Report, there has been good progress in disclosure against the majority of the TCFD's 11 recommended disclosures but more needs to be done to ensure adequate coverage of disclosures as well as ensuring they are comparable, consistent and reliable.

Figure 8: Recommendations of the Taskforce for Climate-Related Financial Disclosures, Final Report 2017.

Core Elements of Recommended Climate-Related Financial Disclosures

Governance
The organization's governance around climate-related risks and opportunities

Strategy
The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management
The processes used by the organization to identify, assess, and manage climate-related risks

Metrics and Targets
The metrics and targets used to assess and manage relevant climate-related risks and opportunities

6.55 The UK Government was one of the first to publicly endorse the recommendations and made their implementation a central part of its 2019 Green Finance Strategy. In November 2020, a cross-Whitehall and regulator Taskforce published an Interim Report and Roadmap setting out an indicative pathway towards mandatory TCFD-aligned disclosures across the UK economy by 2025, with most of the measures to be introduced by 2023.

6.56 The Roadmap includes the steps we are taking on disclosures for listed companies, asset managers, life insurers and FCA-regulated pension schemes.

Listed issuers

6.57 In December 2020, we finalised a new 'comply or explain' disclosure rule for commercial companies with a UK premium listing (LR 9.8.6R(8)), referencing the TCFD's recommendations (PS 20/17). The rule came into force for accounting periods beginning on or after 1 January 2021. The rule requires in-scope issuers to include a statement in their annual financial report setting out:

- whether they have made disclosures consistent with the TCFD's recommendations and recommended disclosures in their annual financial report.
- where they have not done so, an explanation of why, and a description of any steps they are taking or plan to take to be able to make consistent disclosures in the future and the timeframe within which they expect to be able to do so
- where they have included some, or all, of their disclosures in a document other than their annual financial report, an explanation of why
- where in their annual financial report (or other relevant document) the various disclosures can be found

6.58 In June, we published a consultation paper to extend the application of our TCFD-aligned Listing Rule to a wider scope of issuers – principally issuers of standard-listed equity shares as included in LR 14. We consider that between the existing and proposed rules all issuers of listed equity shares admitted to trading on the London Stock Exchange's Main Market will be in scope. This will capture companies with a combined market capitalisation of around £3 trillion.

6.59 Our work on TCFD-aligned disclosure requirements for listed companies interacts closely with similar obligations that BEIS consulted on introducing in the Companies Act 2006. BEIS consulted on implementing disclosure obligations closely aligned with the TCFD's recommendations, but with some changes to embed the requirements into existing Companies Act wording, and with no requirement for scenario analysis. The proposed scope of the BEIS obligations includes Public Interest Entities (PIEs) and companies with securities admitted to trading on the Alternative Investment Market (AIM) with over 500 employees, plus LLPs and private companies with over 500 employees and at least £500 million turnover. While there is some overlap with in-scope companies, as both regimes build on the TCFD recommendations we consider that the 2 regimes can work effectively together.

Asset managers, life insurers and FCA-regulated pension schemes

6.60 In parallel with our work on listed issuers' climate-related disclosures, we published a consultation paper to introduce a disclosure regime for asset managers, life insurers and FCA-regulated pension providers that is also aligned with the TCFD's recommendations.

6.61 The aim is for in-scope firms to provide clients and consumers with decision-useful information on how they consider climate-related risks and opportunities in their role as fiduciaries. We have consulted on rules that will require in-scope firms to make:

- Entity-level disclosures. In-scope firms would be required annually to publish a full TCFD report on their website.
- Product-/portfolio-level disclosures. In addition, we propose a minimum baseline set of consistent, comparable product-/portfolio-level disclosures, including a core set of metrics calibrated to the needs of users across the value chain. These disclosures would be made in regular client reporting or other accessible documents on the firm's website, such as fund factsheets, annually.

6.62 The proposed requirements would apply to firms involved in investment decision-making or investment oversight, including certain asset managers and asset owners.

6.63 We consulted on a phased approach to implementation, with the first phase – from 1 January 2022 – seeing the largest, most interconnected firms brought into scope. The remaining firms would be covered in the second phase – from 1 January 2023.

6.64 Our work to implement TCFD-aligned disclosure rules for asset managers, in particular, will support other disclosure requirements along the investment chain. In particular, the recent Regulations published by DWP for Occupational Pension Schemes that require occupational pension scheme trustees to embed climate-related risks and opportunities into their governance, strategy and risk management processes. They also require these firms to make disclosures in line with the TCFD's recommendations, as well as FCA-regulated pension schemes now in scope. Our proposed rules aim to ensure that consumers receive broadly consistent climate-related financial information about their pension products, irrespective of whether they are offered by providers subject to our or DWP's requirements.

Using our regulatory innovation tools to help the markets evolve

6.65 We are looking at ways our regulatory innovation tools can support our sustainability aims. In addition to our Digital Sandbox Pilot, which we outline at paragraph 5.5, we have launched a second Green FinTech Challenge and the Sustainability TechSprint.

Green FinTech Challenge

6.66 The FinTech Challenge concept involves proactively identifying areas where financial services markets could benefit most from innovation. We then support firms in developing solutions through our firm support services and forums (ie Regulatory Sandbox, Direct Support, Advice Unit and AI forum).

6.67 In 2019/20 we carried out a pilot 'Green FinTech Challenge' to support firms to develop innovative solutions to help the UK's transition to a greener economy. We had not seen many green finance firms within Innovate in the past and so we specifically called on these firms to apply and benefit from our bespoke Green cohort. This included firms which were developing models helping consumers make greener choices and models providing investors with sustainable investment options. The challenge also helped us to understand the issues facing innovative firms in this area and to identify common barriers to innovation. The insights we gathered through our work with the successful Green Cohort of firms informed our broader work in this area.

6.68 We believe the Challenge is a simple and effective way of bringing greater focus to an important issue. It helps firms innovate where there is potential for clear consumer benefit, especially in the growing FinTech sector. The types of innovation, technology and use cases that we will support will be informed by our Digital Sandbox and wider RegTech work programme.

Sustainability TechSprint

6.69 We are using our unique convening role to support new ideas and solutions. As a part of our innovation work programme, we organise TechSprints (hackathons) that bring together industry, academics and regulators to collaboratively solve complex problems in the market. These events help us to shine a light on issues and expand the discussion and awareness of potential solutions.

6.70 In October 2021, we held a Sustainability TechSprint aimed at promoting new solutions and proof of concepts to some of the challenges faced by regulators in the area of ESG data and disclosure. The use of technology to gain insights and monitor financial markets is an increasingly fundamental part of the regulatory toolkit. We see this as an excellent opportunity for firms from across the financial services ecosystem, academia, technology, innovators and start-ups to work with us, and other international regulators, to develop solutions to shared challenges. This is our first TechSprint with a supervisory technology (SupTech) focus and could significantly support the development of regulatory technology work programmes.

7 Embedding climate considerations across FCA functions

Team

7.1 We are developing strategies, organisational structures, resources and tools to support our regulation of sustainable finance. This is in line with our Business Plan commitment to 'enhance our role as a facilitator of sustainability in financial markets and firms by acting as a convener, agent of change and role model'. Embedding our net zero 'have regard' across our functions is also part of this work. We are building an operating model which focuses on net zero and climate considerations first, but which is scalable to all parts of ESG.

7.2 We have implemented a 'hub and spoke' model to help embed climate considerations across our organisation. Our Sustainable Finance Hub provides expertise and oversight to local champions working within our divisions. The Hub leads on cross-cutting workstreams while others are led locally, ensuring that we have a coordinated approach while collaborating with relevant subject matter experts.

7.3 We are ensuring that climate considerations are part of our senior leadership's remit. Our new ESG Director, Sacha Sadan, has been appointed with a mandate to embed more fully ESG considerations across the FCA.

7.4 In CP21/17, we also proposed creating an ESG Sourcebook within our Handbook. This will collate all the relevant regulation involving ESG in one place, beginning with our TCFD-aligned disclosure rules. This will not only make it clearer for regulated firms which rules apply to them but will also help to embed ESG in our supervisory and enforcement practices in future.

7.5 We want to hold ourselves to the same standards that we apply to our regulated firms. So, in summer 2022, we will publish our first TCFD Report, which will reflect on the FCA both as an operating entity and as a regulator. The TCFD Report will be published alongside our Annual Report, and we will report annually after next summer. This will align our reporting with what we expect of issuers, asset managers, life insurers and FCA-regulated pension schemes under our TCFD-aligned rules.

7.6 Our work to embed net zero and climate considerations across our different functions falls into 3 strands:

- **Promote** net zero directly through dedicated policy proposals. We are considering new areas of focus for future policy work, including promoting well-designed, well-governed, credible and effective transition plans that consider the Government's net zero commitments. We will consider matters such as the governance of listed companies' and regulated firms' transition plans, as well as their content and how they are communicated.
- **Consider** net zero in all other policy proposals. We are considering the most appropriate mechanisms to systematically factor net zero considerations into our

wider policy programme. This is to ensure that we take our net zero 'have regard' into account in all our relevant policy development and not solely policy that is directly related to climate change.
- **Embed** net zero in all other FCA functions. We have begun integrating net zero across our other functions, including Supervision and Authorisations. This may include setting net zero expectations at the Authorisations gateway and incorporating net zero themes and questions into our supervisory assessments.

7.7 We have begun further work to embed climate in our supervisory practices, and the outcomes of this work are discussed in the next section of this report.

Using our regulatory and supervisory tools

7.8 We supervise nearly 60,000 firms serving retail and wholesale consumers, and prudentially supervise 48,000 firms. As such, we have a role to play in ensuring that the firms we are responsible for consider the risks from climate change and pay due regard to consumer harm. We will enhance our role as a facilitator of sustainability in financial markets and firms by acting as an agent of change, through developing, supervising and enforcing our policies and regulatory requirements. Where appropriate, we will consider the extent to which firms are factoring in climate change risks and opportunities when making business, risk and investment decisions as part of our ongoing supervision of regulated firms.

7.9 We are playing our part in the Government's strategy to implement mandatory TCFD-aligned disclosure obligations across the UK economy by 2025. We will use our supervisory powers to support our oversight of this regime and use data-driven supervision to monitor compliance and identify firms of concern. Our main focus will be on larger firms in the sectors where there are more likely to be climate-related risks, such as asset management and insurance, and on firms that particularly hold themselves out as 'green'.

7.10 Our work is likely to include undertaking supervisory discussions with relevant firms across all pillars of the TCFD disclosure framework, for example:

- Governance - *the firm's governance around climate-related risks and opportunities*
- Strategy - *the actual and potential impacts of climate-related risks and opportunities on the firm's businesses, strategy, and financial planning where such information is material*
- Risk Management - *how the firm identifies, assesses and manages climate-related risks*
- Metrics and Targets - *the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material*

7.11 Our supervisory approach is focused on how firms make decisions on these issues and the culture in which they take place. We use judgment to supervise against a framework of principles and rules that represent minimum standards of conduct. The firms that we regulate, and their people, are responsible for ensuring that they act in accordance with these. We expect firms and their employees to meet these standards and we hold them to account when they fail to do so. We supervise through the continuing oversight of firms and of individuals controlling firms to reduce actual and potential harm to consumers and markets.

7.12 We have already drawn upon our regulatory tools to monitor harms and engage our regulated firms on ESG matters, including:

- In 2019 Asset Management Supervision carried out initial diagnostic work on a sample of ESG products, to gauge whether there was evidence of potential greenwashing. Early indications from this work were that the 'sustainable' label is applied to a very wide range of products, some of which do not obviously have sustainability characteristics.
- Building on these findings, in July 2021 we issued a Dear Chair letter to firms, setting out our expectations and guiding principles for the design, delivery and disclosure of responsible and sustainable investment funds. We expect firms to have regard to the principles throughout the fund lifecycle and to apply them appropriately to their business.
- Supervision considers stewardship as part of its assessment of firms in the asset management sector. During 2019, Supervision proactively engaged with 17 fixed firms on stewardship to understand their aims and approach. From this work, we identified best practice in effective stewardship and included examples in our Stewardship Feedback Statement (FS19/7). For many firms, the exercise of stewardship and ESG-related factors will be integral to delivering their services effectively.

Evolving our approach

7.13 We recognise the need to evolve our approach to embed ESG and climate risk more holistically across our functions. We will consider the full range of our tools to ensure that firms effectively monitor, manage and mitigate relevant risks and harms from climate change and other ESG factors. To inform our approach, we are engaged in International working groups and maintain dialogue with our global counterparts to exchange best practice.

7.14 In FS19/6, we set out 3 outcomes that will enable us to meet our strategic and operational objectives in respect of climate change and green finance:

- Issuers provide markets with readily available, reliable and consistent information on their exposure to material climate change risks and opportunities.
- Regulated financial services firms integrate consideration of material climate change risks and opportunities into their business, risk and investment decisions.
- Consumers have access to green finance products and services, which meet their needs and preferences, and receive appropriate information and advice to support their investment decisions.

7.15 Looking ahead, we aim to use our regulatory and supervisory tools to support our intended outcomes. We will:

- Oversee how firms design, deliver and disclose on sustainable finance products. We will, where appropriate, challenge firms on how well the ESG characteristics of their products and services align with their sustainability claims and meet clients' and consumers' evolving needs and preferences.
- Oversee compliance with regulatory requirements related to sustainable finance, including implementation of new disclosure rules referencing the recommendations of the TCFD. This will help build confidence in the markets for ESG/sustainable products.

- Engage with firms, as appropriate, to assess the extent to which they are effectively managing the risks and opportunities from climate change and the transition to a low carbon economy, and integrating these considerations within their culture and governance frameworks. We expect to scale this engagement over time to also consider how firms are managing broader sustainability risks and opportunities. This will protect market integrity and a well-functioning, competitive sector.
- Engage with firms to assess the extent to which they are supporting the transition to a net zero economy. Where firms have set climate related targets or made net zero commitments, to consider their delivery plans to achieve them. This will support market integrity and progress towards the Government's net zero commitment.

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