Good practice guide

Climate change risk: A good practice guide for Audit and Risk Assurance Committees

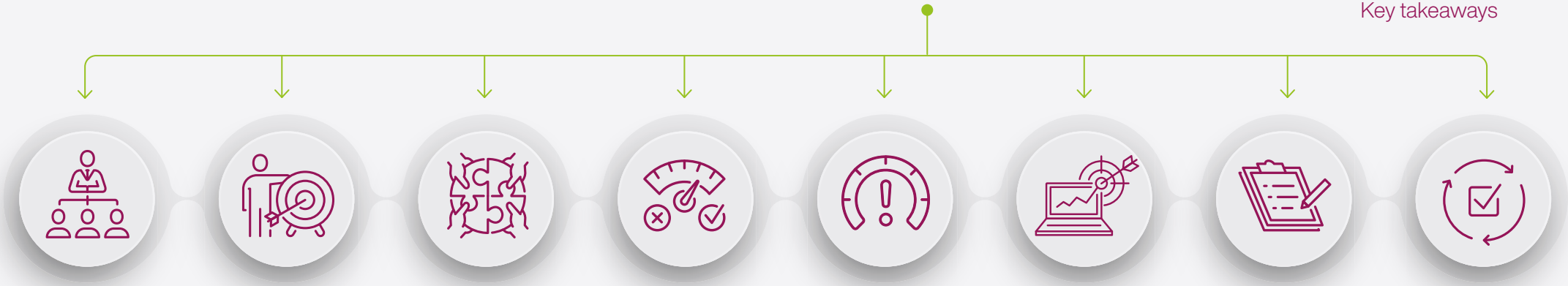
National Audit Office

August 2021

This guide will help Audit and Risk Assurance Committees support and challenge senior management in their approach to managing climate change risks.

We are the UK's independent public spending watchdog

Contents



Governance and leadership — Questions

Integration — Questions

Collaboration and best information — Questions

Risk identification and assessment — Questions

Risk treatment — Questions

Risk monitoring — Questions

Risk reporting — Questions

Continual improvement — Questions

Design & Production by NAO External Relations ● DP Ref: 010795-001

Foreword

The United Nations describes climate change as the defining issue of our time. Action to limit future global greenhouse gas emissions will help restrict future changes in the climate system. Impacts from climate change are already being felt today and will continue to increase in the future.

The government has committed to achieving 'net zero' greenhouse gas emissions by 2050, and a challenge of this scale will require transformative change to the UK economy. There are a number of departments across government that are central to government's response to climate change. However, the all-encompassing nature of achieving net zero means that all government bodies, including departments, arm's-length bodies and executive agencies, have a role to play.[1]

In order to be more resilient to the threat posed by climate change – in addition to meeting the challenges of achieving net zero – it is vital that all government organisations effectively manage climate change risks.

1 Comptroller and Auditor General, *Achieving net zero*, Session 2019-2021, HC 1035, National Audit Office, December 2020.

2 We contacted 101 chairs and received 43 responses. The survey findings provide an indication of the level of climate change maturity across the organisations we audit but should not be viewed as representative of the level of maturity across all ARACs.

Purpose of the guide

Audit and Risk Assurance Committees (ARACs) play a key role in supporting and advising the board and accounting officers in their responsibilities over risk management.

To understand the level of climate change maturity, we sent out a survey to ARAC chairs in the organisations we audit. Our research has shown that, of the ARAC chairs who responded:[2]

81% consider that climate-related risks are relevant to their organisation.

55% stated that their organisation did not have a climate nor a sustainability risk policy.

53% stated that their organisation did not have a dedicated person accountable for sustainability and climate change.

70% said that climate change risks had either never been discussed at an ARAC meeting or were discussed less often than annually.

This guide will help ARACs recognise how climate change risks could manifest themselves and support them in challenging senior management (management) on their approach to managing climate change risks.

We have outlined specific reporting requirements that currently apply in Part Four.

An additional summary is available which outlines the key takeaways for ARACs from this guide. This can also be viewed in Appendix Four.

Our primary audience is ARAC chairs of bodies that we audit, but the principles of the guide will be relevant for bodies across the wider public sector. It promotes good practice and should not be viewed as mandatory guidance.

Climate change and the nature of its impacts on organisations globally is changing rapidly. This guide acknowledges the evolving nature of climate change and its associated risks and opportunities, and will be refreshed in the future to reflect the evolving landscape and requirements.

If you would like to know more about the NAO's work on financial and risk management, please contact:

Mfon Akpan
Director, Financial and Risk Management Hub
mfon.akpan@nao.org.uk
020 7798 5314

Chris Coyne
Manager, Financial and Risk Management Hub
chris.coyne@nao.org.uk
0191 269 8858

Courtnay Ip Tat Kuen
Manager, Financial Audit
courtnay.iptatkuen@nao.org.uk
020 7798 7508

If you are interested in the NAO's work and support for Parliament more widely, please contact:

Parliament@nao.org.uk
020 7798 7665

Part One
What is climate change risk?

Climate change risk

Climate action failure was ranked as the most concerning global risk in the World Economic Forum's *Global Risk Report 2021*.[3] Climate change is not a future concern. It is impacting the UK now, and will only continue to escalate in significance in the future. The Climate Change Committee (CCC) believes that urgent action now will increase the likelihood of being able to reduce irreversible impacts and tipping points, and lower the future costs from climate change that would likely ultimately fall back to the government – the CCC recently identified 61 key risks and opportunities to the UK from climate change.[4]

Climate change risks are impacting all government organisations in some form, and so it is vital that organisations engage now with climate-related risks[5] and opportunities. Forming a robust understanding of climate change risk is the first step for organisations. Organisations should consider climate-related risks with the same rigour as any other strategic risk. Climate change risks should not be considered in isolation and should be clearly integrated into the strategy of an organisation. It is vital for organisations to recognise that the potential impacts of climate change are not only to do with the physical effects on people and the environment, but also to do with the effects of the transition to a changing climate and the adaptation and mitigation work involved. Similarly, the impacts of climate change should not only be considered as long term risks.[6]

61
key risks and opportunities

3 Figure 3, *The World Economic Forum Global Risks Report*.

4 Climate Change Committee, *Independent Assessment of UK Climate Risk*, page 60.

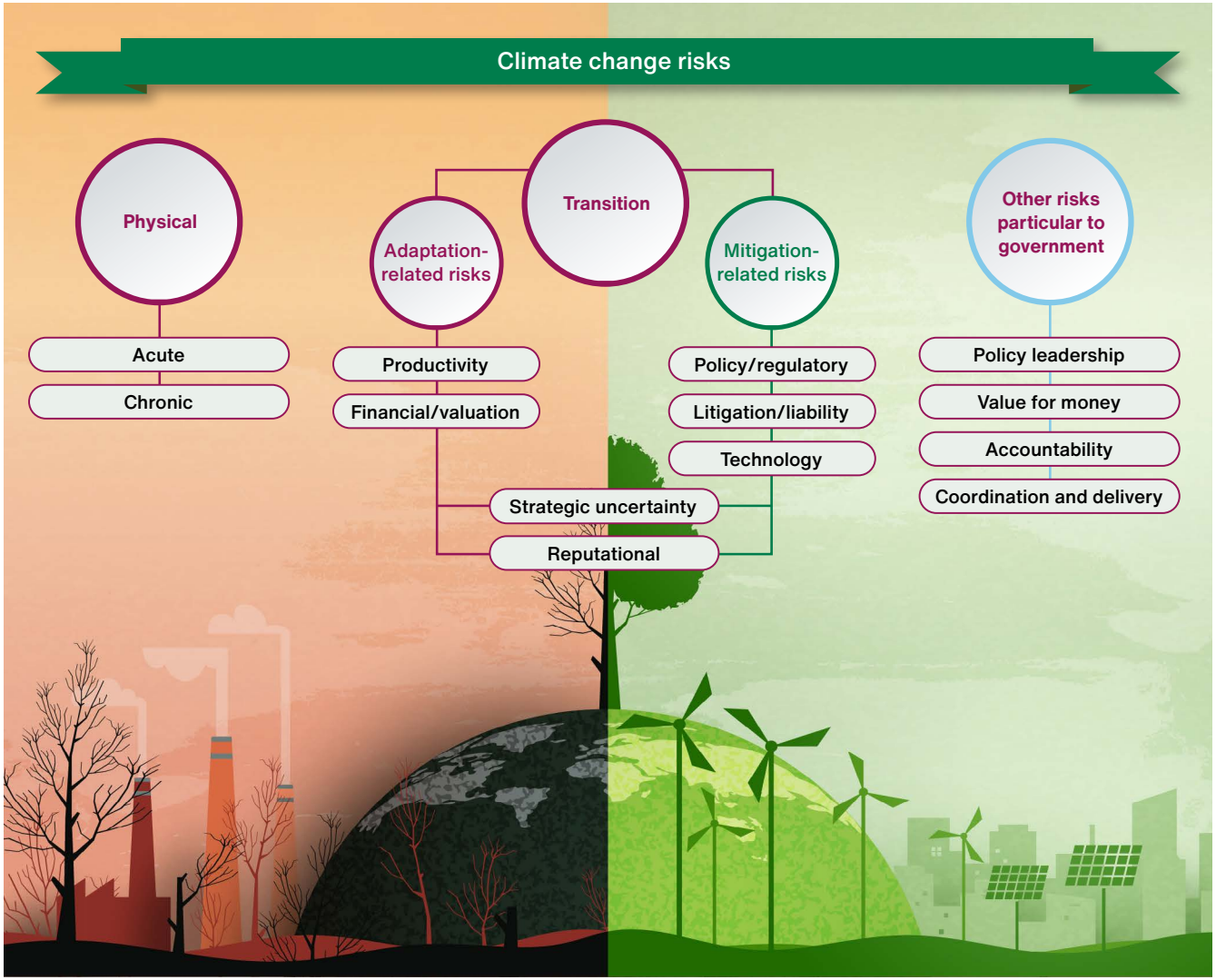
5 Comptroller and Auditor General, *Achieving government's long-term environmental goals*, Session 2019–2021, HC958, National Audit Office, November 2020.

6 *Recommendations of the Task Force on Climate-related Financial Disclosures*, Executive Summary, page II.

Figure 1: Our taxonomy of climate change risk

We have created a risk taxonomy covering the types of risks that our organisations might face in relation to climate change

The risks outlined here are not exhaustive but indicative of the types of risks that public sector organisations are exposed to as a result of climate change.



Source: National Audit Office

Physical risks of climate change

The **physical risks** of climate change can affect organisations in different ways. Specific weather-related events such as floods will have a significant impact on infrastructure, causing damage to buildings and wide-scale disruption to service delivery. This is sometimes referred to as the **acute** physical risk of climate change. The Environment Agency estimates that 5.2 million homes and businesses in England are at risk of flooding and that around 700 properties are vulnerable to coastal erosion over the next 20 years.[7] Extreme weather events could have a direct impact on disrupting supply chains, and the financial risks of maintaining and protecting supply chains could increase. Organisations may have investments in properties which are at a higher risk of being affected by the physical impacts associated with climate change.

Meanwhile, the more gradual impact of rising temperatures, such as sea level rise and coastal change,[8] will pose risks to certain communities and organisations, and changes in temperature and rainfall will place additional pressures on infrastructure.[9] This is sometimes referred to as the **chronic** physical risk of climate change.

As well as direct damage costs, both acute and chronic physical risks can also lead to indirect economic and social impacts through supply chain disruptions, subsequent impacts from infrastructure damage (for example, lack of transport, communication, manufacturing) or market shifts (such as increases in insurance premiums, changes in the need for government support, consumer attitudinal and expectation changes). Government organisations should consider both the direct and indirect risks posed by not only extreme weather events, but also the longer-term gradual impact of increased temperatures on their operations, and, ideally, how these risks (and associated opportunities) interconnect.

7 Comptroller and Auditor General, *Managing flood risk*, HC 962, National Audit Office, November 2020.

8 *National Adaptation Programme 2018*.

9 Committee on Climate Change, *UK Climate Change Risk Assessment 2017 Synthesis report: priorities for the next five years*

Transition risks of climate change

There are also risks associated with transitioning to a lower-carbon and more climate-resilient economy. Transition risks can be considered in two main categories: **adaptation** and **mitigation**. We have listed some adaptation- and mitigation-related risks below. Where risks have both an adaptation and mitigation relevance, we have included them within the category which is most applicable.

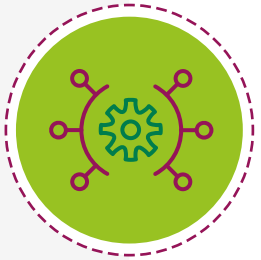
Climate change adaptation

Adaptation to climate change is "the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities" ((Intergovernmental Panel on Climate Change (IPCC)), 2018). Organisations need to develop strategies to manage the risks of adapting to climate change. Some of these risks will stem from the chronic impact of physical climate change risk, for example how to adapt to the impact of rising temperatures on workforces.

Climate change resilience will need to be built into every sector of the UK economy. Therefore, adaptation is a cross-cutting issue. The 25-Year Environment Plan states that the government will make sure that all policies, programmes and investment decisions take into account the possible extent of climate change this century.

Adaptation-related risks

Productivity risk. This is a risk that higher temperatures cause reduced workforce productivity and organisations will need to consider how they adapt to manage this risk. Climate change could cause greater disruption to infrastructure, and workforces will need to adapt to the impact of higher temperatures. Organisations need to be very aware of the changing nature of stakeholder expectations on a high-profile and evolving issue such as climate change (see also: Reputational risk), and the impact these expectations may have on strategy. The long-term impact of climate change is likely to have a profound social impact on communities, and understanding the extent of social risks for organisations will be a key part of strategic planning.



Financial and valuation risk. Climate change adaptation will be costly, and government organisations will need to balance this alongside a number of other strategic priorities. Climate change is likely to have a deteriorating effect on public assets and infrastructure, with a resulting economic impact on government organisations. In financial reporting terms, assets could be overvalued because of the effects of climate change, and there is a greater risk of assets being impaired, and their useful economic lives becoming shorter. Organisations also need to consider how climate change could impact on financial markets and the valuation of any investments they carry – as an example, if an organisation's pension fund valuation is linked to investments and asset valuations, they should consider how exposed they are in the event of investments becoming devalued. Equally, organisations who are investing in the right areas now could potentially mitigate future financial risks, and inaction today could increase future spend (see also: Strategic uncertainty risk).

Adaptation-related risks

Strategic uncertainty risk. Government organisations are making long-term spending decisions now, yet there is a significant degree of uncertainty brought about by climate change which makes this highly challenging. There is significant uncertainty around future changes to decarbonisation policy, and the impact this may have on organisations. It is challenging for organisations to predict the long-term impact that climate change adaptation will have on the country and their service users to determine their approaches today, in addition to any measures which are introduced by government to mitigate climate change risk.

Reputational risk. This applies to both adaptation and mitigation. It covers the risk of organisations failing to adapt quickly to the threats posed by climate change and the transition to net zero, and suffering reputational damage as a result. Government is aiming to reduce public sector emissions by 50% by 2032 against 2017 levels. The approach taken by departments and organisations to reducing emissions has a wider impact in building credibility and trust that achieving net zero is a priority.[10] The government has established an expert group to advise on standards for green investment following concerns it has about organisations 'greenwashing'.[11] It is therefore important that government organisations adhere to these higher standards of credibility when taking and publicising actions on climate change.

Climate change mitigation

Climate change mitigation refers to interventions to "reduce emissions or enhance the sinks[12] of greenhouse gases" (IPCC, 2018). Mitigation consists of the actions that can be taken to decarbonise – actions that will avoid and reduce the level of emissions of heat-trapping greenhouse gases into the atmosphere with the aim of preventing the planet from warming to more extreme temperatures.

Achieving net zero requires transformation on an arguably unprecedented scale and will involve every sector of the economy. In order to stabilise global temperatures at safe levels, far-reaching economy-wide global emissions reductions are required, and quickly. In June 2019, government amended the Climate Change Act 2008 to include a legally binding target for net zero carbon emissions by 2050.[13] The UK is legally committed[14] to reducing economy-wide greenhouse gas emissions by at least 78% between 1990 and 2035, in line with statutory carbon budgets defined by the Climate Change Act 2008.

Mitigation-related risks

Policy and regulatory risks. Future changes to government policy could have a significant impact on the way organisations need to operate. This could be in the form of tighter regulation or environmental tax measures. This was illustrated by measures introduced in June 2021 requiring businesses wishing to bid for major government contracts to have published clear and credible carbon reduction plans to achieve net zero by 2050.[15] For government organisations, there is an increased risk of irregular spending in the event that additional policy or regulatory requirements are enforced to mitigate climate change. This means that organisations will need to carefully monitor the consequences of new regulations. Organisations could also be required to make enhanced disclosures in their annual and financial reporting as well as perform increased due diligence.

10 Comptroller and Auditor General, *Achieving net zero*, Session 2019–2021, HC 1035, National Audit Office, December 2020.

11 Disinformation disseminated by an organisation so as to present an environmentally responsible public image.

12 Emissions can be reduced at the source (for example, cleaner fuels) or by enhancing sinks. Sinks remove greenhouse gases from the atmosphere, resulting in negative greenhouse gas emissions. Greenhouse gas sinks can be engineered solutions (such as carbon capture, use and storage) or biological sinks such as forests, peatlands or oceans.

13 See Part Two for more information on key and upcoming climate change targets.

14 UK enshrines new target in law to slash emissions by 78% by 2035 – GOV.UK (www.gov.uk).

15 Firms must commit to net zero to win major government contracts – GOV.UK (www.gov.uk)

Mitigation-related risks

Litigation and liability risks. Litigation risk could take different forms. As the value of loss and damage arising from climate change grows, litigation risk is also likely to increase.[16] There is a risk that organisations become liable for breaching future climate-related regulatory orders by failing to mitigate the impact of climate change. Organisations may fail to adequately disclose the extent of their exposure to climate-related risks and present a misleading picture to stakeholders. Other organisations may seek to defend themselves from losses they may have suffered from the effects of climate change. For the government, the Climate Change Act 2008 sets legally enforceable emissions budgets – organisations should be aware of the role they play in helping government meet these targets, and any potential consequences that may arise from undermining them.

Technology risk. Changes in technology to support the transition to net zero could have a significant impact on organisations and how they operate. There is likely to be a financial and cost impact as markets adapt to new technologies which support the transition to a lower-carbon economy, and organisations will be required to keep pace with these changes. Organisations therefore may be reliant on technologies which could be superseded by more energy-efficient approaches or become more expensive due to policy measures. Progress in some fields – for example, electric cars – is dependent on making the required advances in battery technology. There are climate-related opportunities here, but in this example, realising these opportunities relies on making sufficient progress in establishing an effective supply chain.[17]

16 *Recommendations of the Task Force on Climate-related Financial Disclosures*, page 5.

17 Supply chain for battery electric vehicles inquiry launched – Committees – UK Parliament.

18 Comptroller and Auditor General, *Achieving net zero*, Session 2019-2021, HC 1035, National Audit Office, December 2020.

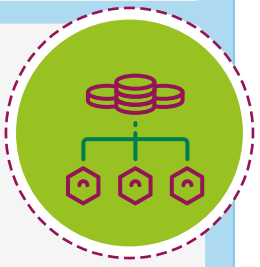
19 Comptroller and Auditor General, *Achieving government's long term environmental goals*, Session 2019-2021, HC 958, November 2020.

20 Comptroller and Auditor General, *Reducing carbon emissions from cars*, Session 2019–2021, HC 1204, National Audit Office, February 2021.

Other risks particular to government

Government and public sector organisations should pay special consideration to the following additional risks. While these are not unique to government, they may be more prominent given the particular challenges faced by government organisations.

Policy leadership risk. Government sets the direction and leads national policy for how the UK responds to climate change. Responsibility for this is held by a number of government departments. The National Audit Office (NAO) has reported on the risks government faces in delivering long-term climate change and environmental objectives. Our report on achieving net zero outlined that establishing a clear strategy before COP26 is a critical step if the UK is to achieve net zero by 2050, and that there is a need for government to enable flexibility in its plans to accommodate longer-term uncertainty, such as the rate of technology development and deployment and the degree to which individuals change behaviours.[18] In our report on achieving government's long-term environmental goals, we commented that alongside clear objectives, government needs a realistic plan for delivery, and transparency over government's delivery plans should help stakeholders understand how they might be affected or involved, and so give them the confidence to invest and plan accordingly.[19] Government has a target to phase out diesel cars by 2030, for example, and our report on reducing carbon emissions from cars noted that the departments responsible for this transition needed a much clearer plan for how they will deliver this societal change.[20] There is therefore an overall risk that government fails to support its various policy objectives with a clear and coherent strategy.



Value for money risk. Government is spending increasing amounts of money on the transition to net zero. There is a risk of inaction and decisions not being made quickly enough to address the net zero challenge, therefore increasing costs in the long term. Conversely, decisions made without sufficient consideration of the risks could also mean that expensive corrective action is needed at a later date. It may also be the case that expenditure is required on piloting solutions which, by definition, may be unsuccessful. It is therefore crucial that risks associated with climate change are integrated within organisations, enabling decision-makers to understand their organisation's appetite for risk and balance value for money considerations against the need to make progress quickly. Spending decisions should be consistent with net zero ambitions, tested for robustness against possible future climate scenarios, and policy programmes should be designed with consideration of how climate change adaptation and mitigation will impact on service users.

Other risks particular to government

Accountability risk. Our report on achieving net zero identified that government had not clearly set out the roles of public bodies outside central departments in achieving net zero.[21] It is vital that all public bodies are clear on their own roles and responsibilities, and how they contribute to government's overall strategy, so they can effectively identify relevant climate-related risks.

Coordination and delivery risk. Climate change adaptation and mitigation requires transformation on a vast scale, at a time when government is managing a significant number of strategic challenges. Actions to address risks need to be coordinated among the various responsible bodies to be effective.[22] There is a risk that organisations do not collaborate effectively to address system-wide challenges such as climate change, and fail to share lessons, develop skills and work effectively across boundaries. This could lead to increased social and economic costs or failure to achieve statutory or strategic targets. Coordination is required across central and local government. Our report on local government and net zero in England[23] said that there are serious weaknesses in central government's approach to working with local authorities on decarbonisation, stemming from a lack of clarity over local authorities' overall roles, piecemeal funding and diffuse accountabilities. In central government, departments must communicate clearly with their arm's-length bodies.[24] All organisations have a responsibility to understand how climate change risk manifests beyond their own organisation in order to ensure that effective public service delivery is not compromised.

Climate-related opportunities

The Task Force on Climate-related Financial Disclosures (TCFD) notes that efforts to mitigate and adapt to climate change also produce opportunities for organisations, for example, through resource efficiency and cost savings, the adoption of low-emission energy sources, the development of new products and services, access to new markets, and building resilience along the supply chain.

According to the CCC, although climate change for the UK is associated mainly with risks, there may be some opportunities, in particular if appropriate adaptation action is taken in time to minimise the risks and to put in place any necessary support to take advantage of the benefits from warmer temperatures. The CCC lists a number of opportunities for the UK, including those available to business and trade from adaptation services, new products and trade routes.[25]

There are also significant transition opportunities for the UK economy associated with climate mitigation and the growth of low–carbon industries and technologies (see example under technology risk relating to electric cars). There are numerous opportunities associated with decarbonisation and government bodies should explore what this means for their own organisations' strategy and operations.

21 See footnote 10, Summary paragraph 11.
22 See footnote 9.
23 *Local government and net zero in England*.
24 National Audit Office, *Local government and net zero in England*, paragraph 22.
25 See footnote 4.

Part Two
Expectations on government organisations

Overriding target expectation: net zero by 2050

The government has set out its ambition and commitment to bring all greenhouse gas emissions to net zero by 2050. Climate change policy is constantly evolving, and this has the potential to bring about uncertainties in organisations' risk landscapes. By monitoring the changing legislation, government organisations will be in a better position to monitor and respond to emerging risks. In our role as the UK's independent public spending watchdog, we produce a robust programme of work to address the climate change- and environment-related challenges faced by government.

You can find our full suite of reports in Appendix Three.

Expectations on reporting are outlined in Part Four.

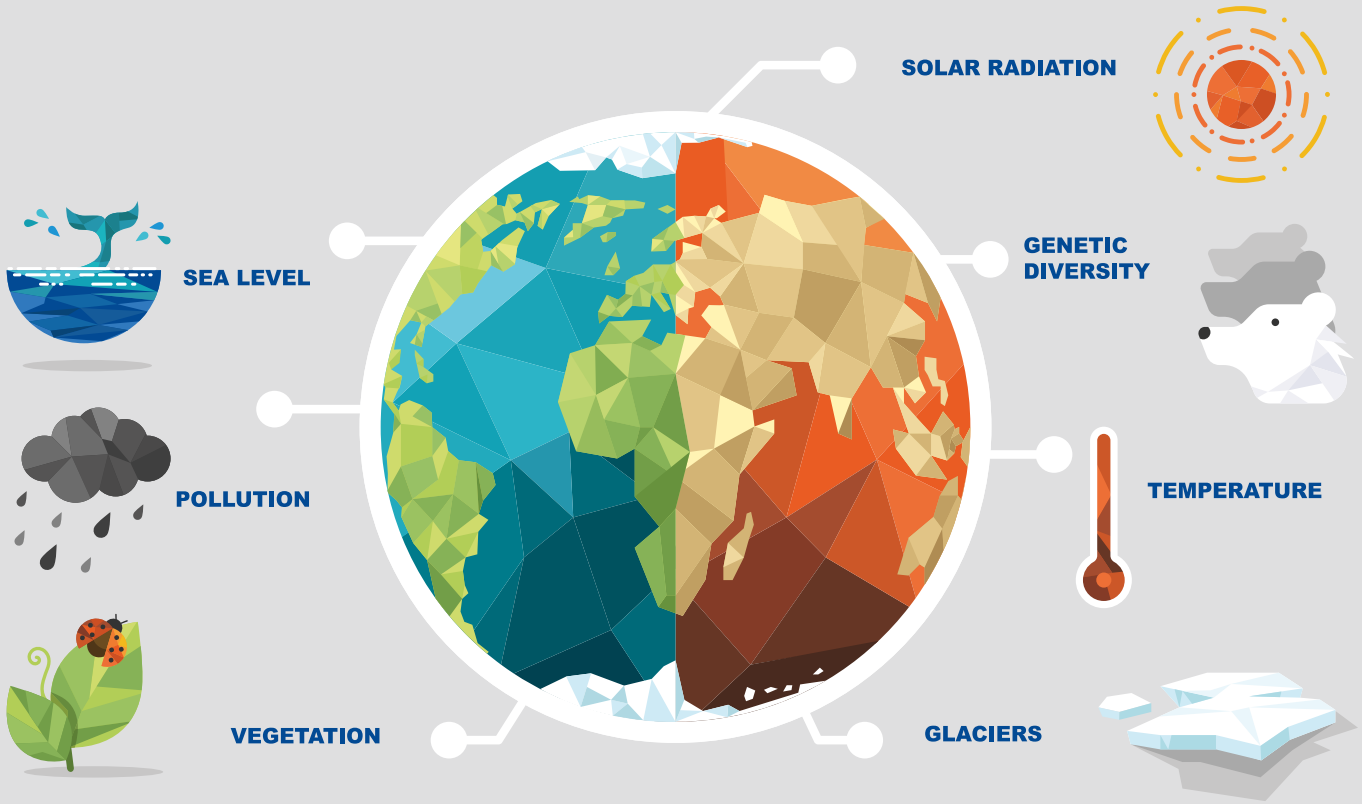
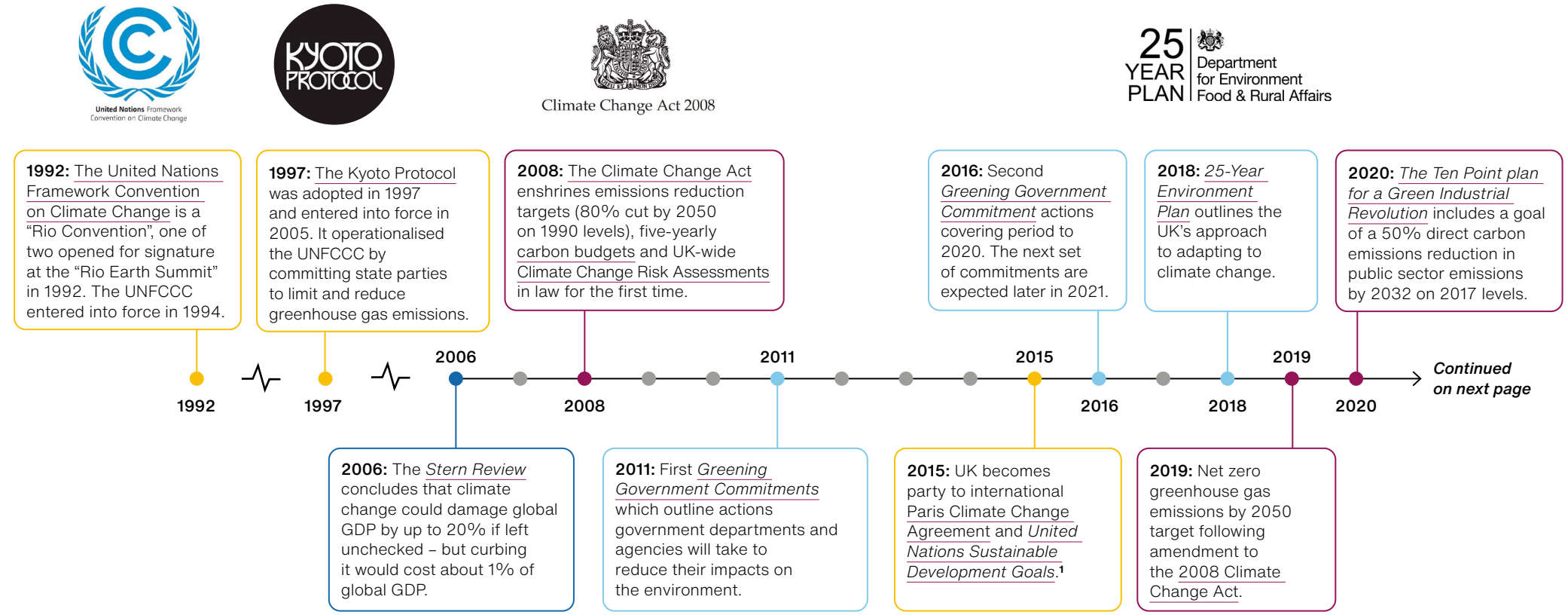


Figure 2: Key UK and international legislation, policies, targets and events related to climate change, as at July 2021

We have produced a timeline of the key government initiatives and policies on climate-related issues known to date. This will assist boards and Audit and Risk Assurance Committees to place their organisation's climate change risks in context.

Key past legislation, policies targets and events related to climate change risks

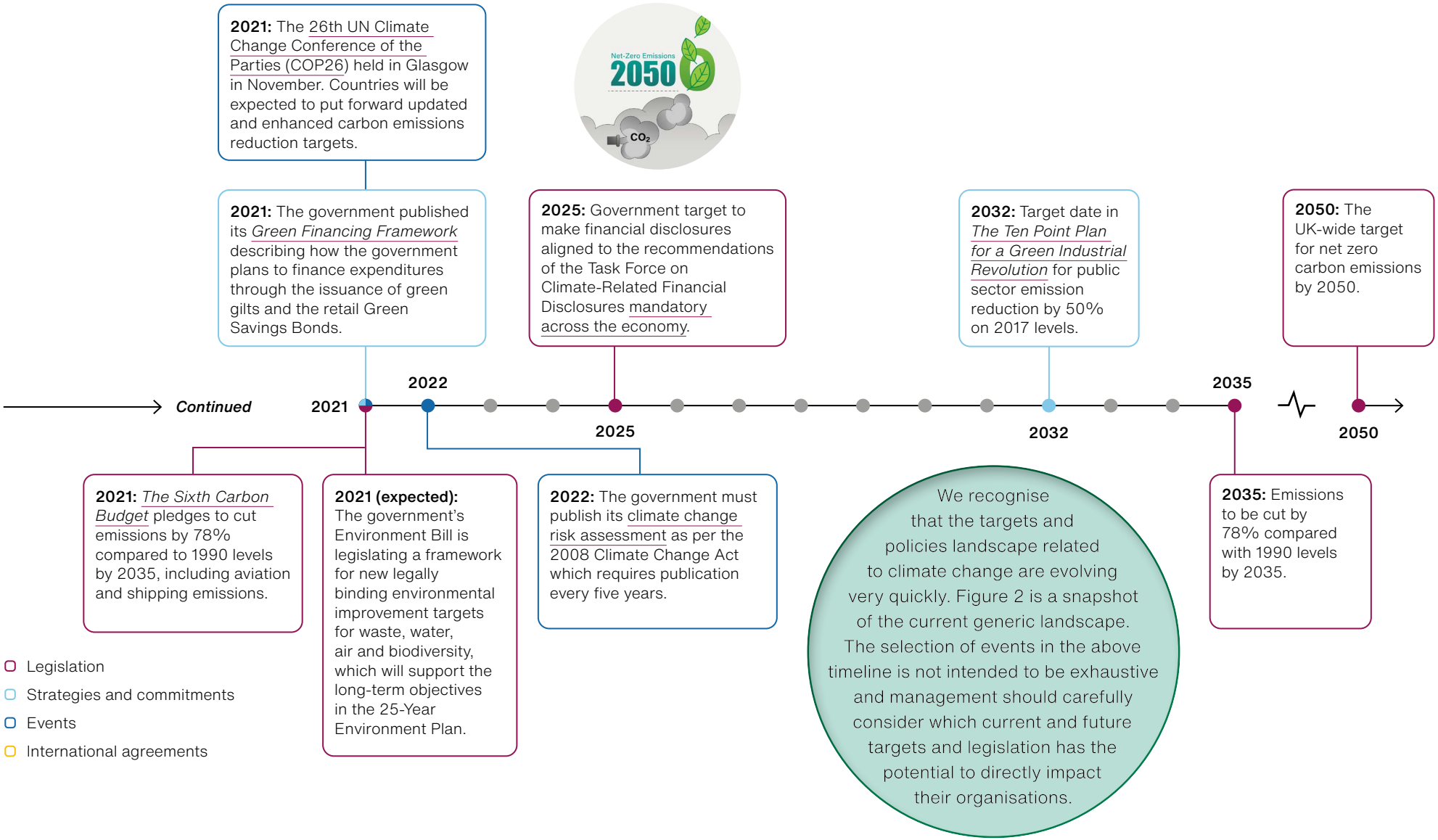


Note

1 Although all the goals are related to sustainability in some way, goal 13 is specifically related to Climate Action.

Figure 2 *continued:* Key UK and International legislation, policies, targets and events related to climate change, as at July 2021

Targets and policies related to climate change risks as at mid-2021



Source: National Audit Office

Part Three
How to support and challenge management

Audit and Risk Assurance Committees (ARACs) play a key role throughout the whole risk management process. Given the breadth and significance of climate risks, it is appropriate that all elements of the risk management process are scrutinised for their effectiveness in responding to climate risk. In this part, we outline how ARACs can support and challenge management on climate change risk.[26] **HM Treasury's *Orange Book*** is widely used across government as guidance on how to manage risk.[27] For each main risk management principle we:

- explain the key climate change considerations;
- outline questions which ARACs can ask management; and
- provide an illustrative example.[28]

Figure 3: The *Orange Book's* Risk Management Framework

HM Treasury's *Orange Book* sets out a principle-based approach that provides flexibility and judgement in the design, implementation and operation of risk management

Source: HM Treasury, *The Orange Book – Management of Risk – Principles and Concepts*, 2020

26 For the purposes of Part Three, management incorporates accounting officers and senior leadership of the organisation.

27 The National Audit Office has exercised judgement in determining which questions apply to each principle, with the aim of providing ARACs with a structured approach to considering climate change risk.

28 The examples selected are not intended to be exhaustive or examples of best practice, but are illustrations of organisations' good practices in addressing climate risk.

Governance and leadership

Main principle

Risk management shall be an essential part of governance and leadership, and fundamental to how the organisation is directed, managed and controlled at all levels.

Key climate change considerations

The board's responsibility to consider climate-related risks and the possible implications should be clearly defined in the risk management framework, with responsibilities and accountabilities for climate risk management documented.[29] Effective risk management should support informed decision-making in line with the organisation's risk appetite, ensure confidence in the response to risks and ensure transparency over the principal risks and how these are managed. The board should determine and continuously assess the nature and extent of the principal risks that the organisation is exposed to and is willing to take to achieve its objectives.

At the 'Governance and leadership' level, clearly defining individual or committee accountability for climate risk at board level is crucial for achieving a fully integrated strategy. Given the breadth and far-reaching strategic implications of climate change, accountability should sit with the most senior individual in the organisation, with responsibility for risk identification, assessment and ongoing control delegated as necessary.

The accounting officer is responsible for setting the overall approach in relation to climate change. The ARAC supports and advises the board and the accounting officer in their responsibilities over climate-related risk management. Crucially, the organisation's governance and leadership must be dynamic in supporting the identification and emergence of significant risks such as climate change. This relies on having effective processes and analytical methods in place for climate risk assessment, enabled by a board-led culture that encourages serious consideration of climate risk across the organisation. Boards and ARACs should expect management to provide an integrated view of how the organisation is approaching climate-related risk, together with a view of how opportunities might evolve.

29 HM Treasury, *Orange Book*, 2020.

Governance and leadership *continued*

Questions ARACs could ask

For further questions see Appendix One

- Q Is there a clear understanding of what the organisation's requirements are in terms of government policy?
- Q How have climate-related risks and opportunities been identified and factored into the organisation's strategy?
- Q How effective is the risk culture promoted by leadership in supporting debate, discussion and understanding of climate change as an emerging risk?
- Q How does management gain and maintain an appropriate level of understanding of climate-related risks and opportunities that are likely to have a material impact on the organisation?
- Q Is there clarity of roles, responsibilities and accountabilities for each component of the 'three lines of defence' as part of the overall risk management of climate change?[30]
- Q How does the board gain assurance over the management of climate-related risk in the organisation? For example:
  - assessing the organisation's approach to managing climate-related risks;
  - reviewing board briefings on relevant climate change matters, including results of climate risk deep-dives; and
  - assessing management's use of data and consideration of data integrity to gain assurance over any potential impact.

21%

Of the organisations that ARAC chairs said had a climate or sustainability risk policy, only 21% were presented to ARAC for review and approval

30 *Orange Book*, Annex 2.

Governance and leadership *continued*

Example

Lloyds' governance structure

Climate risk is embedded in the organisation's enterprise risk management and governance framework as well as governance oversight at group leadership and board levels.

Governance

Our governance structure provides clear oversight and ownership of the Group's sustainability strategy and management of climate-related risks. Governance for climate-related risks is embedded into the Group's existing governance structure and is complementary to governance of the Group's sustainability strategy.

Lloyds Banking Group Board

- Responsible Business Committee
- Group Executive Committee
- Group Executive Sustainability Committee
- Group Sustainability team
- Board Risk Committee
- Group Risk Committee
- Climate Risk Executive Management

Divisional forums/ working groups | Group Sustainability forum | Climate Risk Planning & Prioritisation

Specific committees are in place to establish clear lines of accountability for sustainability and climate change, and demonstrate how information feeds up to the board for decision-making.

Board-level ownership and oversight of the sustainability (including climate change) agenda. Shows integration into Lloyds' existing risk and governance structure.

Source: Annual Report and Accounts 2020, page 22

Integration

Main principle

Risk management shall be an integral part of all organisational activities to support decision-making in achieving objectives.

Key climate change considerations

Climate change risks and opportunities – like other principal risks – should be embedded within an organisation's strategy and risk management framework. As demonstrated in Part One, climate change risks will have a range of impacts across an organisation, and in order to properly manage these risks, they need to be understood and firmly integrated as part of an organisation's strategy. Climate change risks cannot be considered in isolation. For instance, risks to value for money when committing to projects need to be considered alongside the risks associated with policy and legislative changes, as well as risks to managing strategic uncertainty. As organisations are making strategic decisions, it is essential that climate change risk is fully understood and continually evaluated alongside all other principal risks.

Achieving effective climate risk integration first relies on having a clear understanding of climate risks and opportunities faced by the organisation, informed by data and quantified using scenario analysis modelling wherever feasible and proportionate. Integrating climate risks into the existing risk management framework involves an assessment of the interactions between climate risks and other organisational risks. This process should consider whether climate risks are best addressed as a cross-cutting driver of other risks, standalone risk(s) or both. Integration should then involve a systematic assessment of all elements of the risk management framework to test whether an update is needed to reflect climate risks identified.

This process is an opportunity for organisations to critically assess the extent to which risk management is embedded within strategic decision-making. If strategic decisions are being taken in isolation of risk management considerations, climate risks and opportunities will not be effectively addressed over time.

Integration *continued*

Questions ARACs could ask

For further questions see Appendix One

- How does management build awareness and understanding of emerging risks such as climate change across the organisation?
- What processes does the organisation have in place to embed climate-related risks throughout the organisation?
- Do the organisation's strategic objectives, budgets and delivery plans reflect management's consideration of climate change risks and opportunities?
- How is climate risk embedded in climate-related policy development (where applicable)?
- How does management ensure that climate change considerations are clearly factored into its risk appetite?
  - Is the organisation's risk attitude and appetite over climate change-related matters understood by the wider workforce, particularly key decision-makers?
  - Is management able to explain the impact of climate change risk on decision-making across the organisation?

60%

of ARACs did not know what to ask management about climate-related risks and the impacts on the department's operations

Integration *continued*

Example

NatWest Group's integrated strategy

We champion potential; breaking down barriers and building financial confidence so the 19 million people, families and businesses we serve in communities throughout the UK and Ireland can rebuild and thrive. If our customers succeed, so will we.

Areas of Focus
There are three focus areas of Our Purpose where we can make a meaningful contribution to our customers, colleagues and communities.

Our Strategy
Our strategy is to deliver on Our Purpose and drive sustainable returns to shareholders through four strategic priorities.

NatWest Group is the largest business and commercial bank in the UK, with a leading retail business. We are the biggest

Natwest Group integrates the climate challenge into its strategy and purpose by highlighting it as one of three areas of focus.

On page 73 of NatWest's annual report, NatWest Group is taking steps to develop scenario analysis capabilities to better understand and act on the implications of climate-related risks and opportunities for its business and customers.

There is a clear ambition from NatWest Group to integrate and embed climate change into its culture and decision-making. Pages 69 onwards of NatWest's annual report highlight progress made during 2020 on each key area within its climate ambition.

Source: Annual Report and Accounts 2020, pages 4 and 69

Collaboration and best information

Main principle

Risk management shall be collaborative and informed by the best available information and expertise.

Key climate change considerations

Climate change is a cross-government challenge and we outline cooperation as a key risk to government in Part One. For organisations in government, particularly departments, it is critical that management identifies appropriate activities that capture the extent of climate change risks. Management needs to look beyond its respective organisation to see how risks can emerge from key stakeholders and third parties – for instance, how their supply chain could be at risk from the impact of climate change. One of the lessons learned from the government's response to COVID-19 was the importance of effective coordination and communication between government departments, central and local government, and private and public sector bodies.[31] Given the scale of the challenge, government organisations will benefit from collaboration with local government when considering how to develop strategies for dealing with climate change risk. Our report on local government and net zero noted that government has not yet set out to local authorities how it will work with them to clarify responsibilities for net zero.[32] Departments need to consider whether they have an effective strategy for aggregating climate change risks from their arm's-length bodies, and whether arm's-length bodies are fully supported to identify and escalate climate change risks. As climate change is growing in prominence across the world, areas of expertise will emerge – organisations should be collaborative, using the opportunities that arise to share knowledge and learn lessons so they can increase the maturity of their organisations to manage climate change risk.

31 National Audit Office, *Initial learning from the government's response to the COVID-19 pandemic*, page 24.

32 National Audit Office, *Local government and net zero in England*, paragraph 8.

Collaboration and best information *continued*

Questions ARACs could ask

For further questions see Appendix One

- Q How does management keep up to date with climate change-related developments, policy and regulatory changes?
- Q How confident is management in its understanding of the organisation's responsibilities in delivering wider departmental or government policy objectives, such as achieving net zero by 2050, and the Greening Government Commitments?
- Q How does management identify external risks which have the potential to impact it from beyond the organisation, for example in its supply chain or – in the case of departments – within arm's-length bodies?
- Q Has management considered data sharing arrangements with other government bodies to support a joined up and collaborative approach to climate risk management?
- Q How does management get an awareness of what matters to its stakeholders on climate change risk?
  - What is management doing to respond to those expectations?

62%

of ARACs did not know what to ask management about climate-related financial reporting and disclosures

Collaboration and best information *continued*

Example

Department for Transport (DfT) – UN Sustainable Development Goals

DfT discloses its activity in line with the UN Sustainable Development Goals, some of which relate directly to climate change.

13. Climate action
Take urgent action to combat climate change and its impacts

- Developing a comprehensive and cross-modal Transport Decarbonisation Plan to look at how the transport sector can be decarbonised.
- Published 'Decarbonising Transport: Setting the Challenge' document (March 2020) which sets out the scale of the action needed for a net zero transport system in the UK by 2050, building on previous work undertaken by the Department to foster green transport, including the 2019 Clean Maritime Plan, the 2018 Road to Zero Strategy, the 2018 Aviation Green Paper and the 2017 Cycling and Walking Investment Strategy. https://www.gov.uk/government/publications/creating-the-transport-decarbonisation-plan
- Running the Renewable Transport Fuel Obligation (RTFO), a certificate trading scheme to support low carbon fuels, which saved 2.88 million tonnes of CO_2 emissions in just the last three quarters of 2018 (the equivalent of taking 1.8 million vehicles off the road for a full year) and expected to save further nearly 85 million tonnes of CO_2 from 2017 to 2032.
- Working with Defra and transport operators to look at the interdependencies and potential for cascading failures from more severe and frequent climate events (e.g. flooding).
- Commissioned the Met Office to review the worst-case scenarios behind the Department climate change risk assessment models, to ensure these are robust.
- Supporting local Highways Authorities through the £578 million Local Highway Maintenance Incentive Fund to improve behaviours and efficiently address emerging climate change issues.
- Advocating for ambitious and global cooperation at the International Civil Aviation Organisation (ICAO) and International Maritime Organisation (IMO), aiming to reduce carbon in a global economy, one of our strategic priorities set out in the Decarbonising Transport: Setting the Challenge document

The separate publication from DfT outlines current targets, progress against these and also future activity to achieve the policy objectives.

DfT has outlined the activity it has undertaken to address the impact of climate change on its operations, including commissioning the Meteorological Office to review the department's climate risk assessment models and perform assessments based on worst-case scenarios to confirm robustness.

Source: Annual Report and Accounts 2020, page 80

Risk identification and assessment

Main principle

Risk management processes shall be structured to include risk identification and assessment to determine and prioritise how the risks should be managed.

Key climate change considerations

Risk identification

Organisations have a responsibility to undertake activities to identify risks and opportunities associated with climate change. While some of the longer-term impacts arising from climate-related risks may be uncertain, there is a clear requirement to consider how adaptation-related risks and mitigation-related risks could impact the organisation. The Task Force on Climate-related Financial Disclosures (TCFD) cautions organisations against prematurely concluding that climate-related risks and opportunities are not material based on perceptions of the longer-term nature of some climate-related risks.[33] When thinking about climate-related risks, identification activities should be far-reaching and consider all aspects of the organisation.[34] Forming working groups and running internal consultations with different business units can help build the 'whole organisation' view and response to climate risks. Our risk taxonomy in Part One may help ARACs and management consider how potential climate-related risks could manifest for their organisation.

Questions ARACs could ask

For further questions see Appendix One

Risk identification:

- Q What is management's process for identifying climate-related risks?
  - Does this process extend across the whole organisation, so all potential climate-related risks can be identified?
  - For departments, does this include risks within arm's-length bodies?
- Q Can management articulate what climate-related risks are most significant to the organisation and why?
- Q If the organisation considers climate change as an emerging risk, how confident are we that management has a clear understanding of the indicators which would cause it to escalate to a principal risk?
- Q What timeframe (short-, medium-, and long-term) does management use in its identification and assessment process?

98%

of ARACs said that they had not undertaken a detailed discussion or deep-dive into climate change risk

33 See footnote 16, page 33.

34 See footnote 29, page 22.

Risk identification and assessment *continued*

Risk assessment

Once management has identified their climate-related risks, they should undertake a comprehensive analysis to measure the impact and likelihood of occurrence over various timescales. This will enable management to assess the relative significance of climate-related risks in the context of the other risks they are managing. Management should also assess the interactions between existing risks and climate risks as part of this process. By properly measuring the risk, management will be able to clearly demonstrate the nature and level of risk. Organisations may find it useful to measure climate risk in a manner consistent with the measurement of their other principal risks, so that the likelihood of the risk occurring, and the consequences of the risk materialising, can be benchmarked. However, management should also acknowledge the unique nature of climate risks requiring a different analytical approach due to factors such as longer time horizons, lack of historical data and impacts of non-linear and 'tail risk'[35] events. For example, the impact of climate change and the extent of rising temperatures are uncertain and there is a range of different outcomes. Organisations should plan for a range of scenarios[36] to understand the different scales of impact.

Risk evaluation will involve comparing the results of this exercise to the organisation's risk appetite to determine what additional action is required. In the context of climate change, management could, for example, perform an analysis of the physical risk of climate change – either through extreme weather events or the gradual impact of rising temperatures – on their property estate, so they can evaluate their options and inform decision-making on further action.

Questions ARACs could ask

For further questions see Appendix One

Risk assessment

- Q How are climate change risks measured?
  - Has management considered a range of methods to analyse the impact of climate-related risks?
  - Are we confident that that the methods used to measure the risks are appropriate for climate-related issues?
  - Are we confident that management has good-quality data to be able to calculate the impact of climate-related risks to the organisation?
- Q How confident are we that management understands and considers the inherent uncertainty associated with risks arising from climate change?
  - Does management conduct horizon-scanning and scenario analysis to consider the range of outcomes?
  - Has management conducted deep-dive reviews (where required) and assessed the results to help it understand the impact and severity of climate-related risks on the organisation, how they should be prioritised?
- Q How is the organisation's risk appetite or tolerance levels considered when evaluating climate-related risks?[37]
- Q Can management demonstrate that it has conducted a robust assessment of all climate change risks?

35 Tail risk is the chance of a loss occurring due to a rare event, as predicted by a probability distribution.

36 The TCFD recommends scenario analysis as a method to measure the impacts of climate change risks.

37 Government Finance Function, *Risk Appetite Guidance note*.

Risk identification and assessment *continued*

Example

Standard Chartered's risk definition and taxonomy

Graphic demonstrates how climate risk, identified as a material cross-cutting risk, manifests through existing principal risk types.

Figure 26: Climate risk as a material cross-cutting risk

Climate risk manifests through existing risk types

Credit

CCIB
Potential for disruption or productivity loss in clients' operations due to physical risk to their assets; or transition risks impacting profitability of existing business models

CPBB
Potential for impact to collateral valuation for loans secured against properties

Operational
Potential for acute or chronic physical risks disrupting our own properties (including branches, offices), client service resilience and critical supply chain services

Country
Potential for negative impact to sovereign credit ratings from acute or chronic physical risks, or transition risks impacting commodity prices and import/export activities

Reputational
Potential for stakeholders to take a negative view Standard Chartered due to perceived misalignment with our stated sustainability commitments

Compliance
Potential for failing to comply with the current and emerging climate risk regulations (e.g. Prudential Regulation Authority's Supervisory Statement SS 3/19)

Traded
Potential for changes in fair value of assets due to physical or transition risk

Capital & Liquidity
Potential for impact on Standard Chartered's capital adequacy to withstand impacts of physical and transition risks, manifesting through the PRTs described above

Principal Risk Types: financial non-financial

Source: Task Force on Climate-related Financial Disclosures (TCFD) 2020, page 40

Standard Chartered's risk appetite statement

Climate Risk – Material cross-cutting risk

The Group currently recognises Climate Risk as a material cross-cutting risk. Climate Risk is defined as the potential for financial loss and non-financial detriments arising from climate change and society's response to it.

Risk Appetite Statement
The Group aims to measure and manage financial and non-financial risks from climate change, and reduce emissions related to our own activities and those related to the financing of clients in alignment with the Paris Agreement

There is a clear statement about how Standard Chartered views climate risk in the organisation and how this chimes with the existing risk appetite.

Standard Chartered recognises that climate risk is an evolving risk that requires scenario analysis over extended periods of time. It has undertaken various stress tests and published the results in its Task Force on Climate-related Financial Disclosures report.

Stress testing

Climate Risk intensifies over time, and future global temperature rises depend on today's transition pathway. Considering different transition scenarios is crucial to assessing Climate Risk over the next 10, 20 and 50 years. Stress testing and scenario analysis are used to assess capital requirements for Climate Risk and in 2020 physical and transition risks were included in the Group Internal Capital Adequacy Assessment Process (ICAAP). In 2021, we will undertake a number of Climate Risk stress tests, including by the Bank of England and the Hong Kong Monetary Authority. This will help us develop our understanding and management of Climate Risk.

(+) Details on the Group's Taskforce on Climate-related Financial Disclosures can be found on **sc.com/tcfd**

Source: Standard Chartered, Annual Report and Accounts 2020, page 269

Risk treatment

Main principle

Risk management processes shall be structured to include the selection, design and implementation of risk treatment options that support achievement of intended outcomes and manage risks to an acceptable level.

Key climate change considerations

Management should be able to clearly articulate and support the options for treating and responding to each climate change risk they have identified. This will involve balancing the benefits of achieving objectives against the costs or disadvantages of pursuing them. When deciding on how to treat and respond to climate change risks, management should clearly identify who is accountable and responsible for actions, and for defining key performance measures, metrics and targets. Management should also consider whether treatment of other principal risks should be adjusted if climate risk has been identified as a potential amplifier or driver of these risks during the risk assessment phase.

One of the key risks associated with climate change is managing uncertainty and ensuring climate change is considered in strategic decision-making. For example, if an organisation is planning a project, it is critical for management to have a clear idea of how climate change risks are being treated and responded to so that these considerations are integrated in spending decisions. Identifying reliable and relevant data sources is a crucial enabler for this and is likely to form a core part of the early stages of an organisation's climate risk response.

Developing a strong climate change adaptation strategy will help organisations respond to the risks associated with adapting to the effects of climate change, including the impact they could have on human health, well-being and productivity across organisations and communities. Adaptation strategies should include clearly defined actions, timescales and accountabilities to facilitate robust assessment on progress at periodic intervals.

Risk treatment *continued*

Questions ARACs could ask

For further questions see Appendix One

- Q How confident are we that management can demonstrate a clear rationale for the treatment activities and response to climate change risks, including the benefits it expects to gain?
- Q Has enough consideration been given to the uncertainties that exist in this area?
  - How flexible is management's current risk response strategy in dealing with the unpredictability of climate change risks?
- Q Are climate-related risk responses aligned with the organisation's risk appetite?
  - Is there any indication that management needs to reassess its risk appetite to respond appropriately to climate change risk, particularly given the unpredictable nature of the risks?
- Q With extreme climate events likely to worsen over time and potentially at an accelerated pace, has management considered how responding to these will impact on other areas of the organisation, and the management of other principal risks?
- Q Has management developed a climate change adaptation strategy for the organisation, and have climate change risk treatment and response plans been integrated as part of this?
- Q Climate change targets by their nature can be long-term. Is management clear on what represents good progress against its climate change targets?

49%

of ARACs said that their organisation had neither a board-approved risk appetite statement containing a qualitative statement on climate risk, nor an approach to sustainability in general

Risk treatment *continued*

Example

New Zealand's Department of Conservation's Climate Change Adaptation Action Plan

Adapting to climate change

Developing the Climate Change Adaptation Action Plan

What's the issue?

In line with global trends, Aotearoa New Zealand's climate is changing. The changes are having significant effects on the natural and cultural heritage and visitor and recreation resources Te Papa Atawhai manages.

Direct effects of climate change include damage to infrastructure or habitat from rising sea levels, and more frequent storm and flood events. Indirect effects involve the shifting of habitats and species distributions, including the movement of potentially invasive species into areas currently unsuitable for them, as a result of changing temperature and precipitation patterns.

Changing climate conditions will affect tourism distribution patterns and visitor risks in many places, raising visitor management issues. As the climate continues to change in coming decades, we expect elevated fire risks, more storm surges, more extreme precipitation events, longer droughts, ocean acidification and continued sea-level rise.

We therefore developed the Climate Change Adaptation Action Plan (CCAAP), drawing on international best practice, to outline actions we will take to reduce the risks posed by the changing climate. The CCAAP establishes a long-term strategy for climate change research, monitoring and action.

What's our approach?

- Information gaps that will affect our ability to achieve the purpose of the CCAAP have been identified, prioritised, significantly addressed and communicated.
- We have completed detailed risk assessments to identify the exposure, consequence and vulnerability to climate change effects.
- Consistent and integrated internal policies and actions are being implemented to ensure our areas of responsibility (such as biodiversity, heritage and recreation) are resilient to existing and future climate change effects.

What has been accomplished?

- Our 5-year CCAAP has been published.
- Risk assessments on the effects of climate change in Fiordland and Mount Aspiring national parks were completed following the severe weather event in February 2020.
- Te Papa Atawhai and NIWA have significantly increased our climate change science capabilities.
- Te Papa Atawhai is informing development of the National Adaptation Plan (as part of the Climate Change Response (Zero Carbon) Amendment Act 2019), bringing conservation values to the forefront of the plan.

The Department's risk reporting is accompanied by a clearly articulated risk response plan. The Department has identified the potential physical risks that it might be affected by in the future which they will eventually need to adapt to, some sooner than others. To respond to these physical risks, the Department has created the Climate Change Adaptation Action Plan, which will help management identify, respond to and monitor the physical risks as they arise. It is transparently disclosed for stakeholders to understand what management's plan is to respond to future climate-related challenges.

Source: Annual Report and Accounts for the year ended 30 June 2020, page 103

Risk monitoring

Main principle

Risk management processes shall be structured to include the design and operation of integrated, insightful and informative risk monitoring.

Key climate change considerations

As an area that will continually grow in importance and urgency, climate change risk requires regular monitoring. This is necessary to understand how and when a risk has changed, and whether the risk treatment actions remain appropriate. Management should aim to embed climate-related risk monitoring into their wider performance metrics, which will ensure that climate-related risks are fully integrated into the organisation's strategic objectives and key performance indicators. This should also involve a periodic re-identification and re-assessment of climate risks (see section Risk identification and assessment). The frequency of this process can be adjusted based on the materiality[38] and the nature of the climate-related risks faced by the organisation. Data-sharing between organisations can also be highly valuable for effective climate risk monitoring and can help support a joined-up and consistent approach to climate risk across government.

Organisations should ensure their existing risk monitoring process is structured to effectively monitor climate-related risks and – if not – what steps management needs to take to integrate them. This might include assessing whether internal controls are in place for effective monitoring and whether other expertise, such as internal audit reviews, are helpful in monitoring risks. Updating internal documentation on the risk management framework can be useful to define reporting lines, data flows and responsibilities for climate risk monitoring.

38 IAS 1 was updated in 2020 with a new definition of materiality: "Information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.

Risk monitoring *continued*

Questions ARACs could ask

For further questions see Appendix One

- Q Does management understand how its overall risk profile is likely to change as a result of climate change risk?
- Q Has management defined core performance metrics, and key risk and control indicators for climate-related risks, and have risk appetite and tolerance been factored in?
  - How do these metrics influence strategic decision-making, investment plans and budget considerations?
- Q How are the results of climate change risk monitoring shared with the rest of the organisation?
  - Is there a feedback loop between the results of monitoring, the assessment of the residual risk, the effectiveness of the risk management activities, and the decision-making?
- Q How often does management re-assess the impacts of existing climate-related risks? For example, if the organisation is impacted by legislative changes or new government targets, does management track these changes?
- Q How does the department monitor risks within its arm's-length-bodies and ensure that climate change risks are escalated and aggregated effectively?
- Q Is there any benefit to be gained from a specific oversight group or board with responsibility for climate change to monitor progress against climate change risks?

33%

of ARACs said that climate risk was reported as an emerging/future risk

Risk monitoring *continued*

Example

Results from HSBC's corporate survey and explanation of scope 1, 2 and 3 emissions

We have identified six sectors where we are most exposed to transition risk and our level of lending activity in those sectors. From our corporate questionnaire, we collate information about our customers' climate transition strategies to assess their need and readiness to adapt, and to identify potential business opportunities. This supports our decision making and credit risk management processes. Across 2019 and 2020, we received responses from customers within the six high transition risk sectors, which represented 41% of our exposure – an increase of seven percentage points from 2019. The table below shows our lending activity in the six sectors and insights from our questionnaire.

Within the power and utilities, and metals and mining sectors shown in the table below, our direct exposure to thermal coal is 0.2% of the wholesale loans and advances figures.

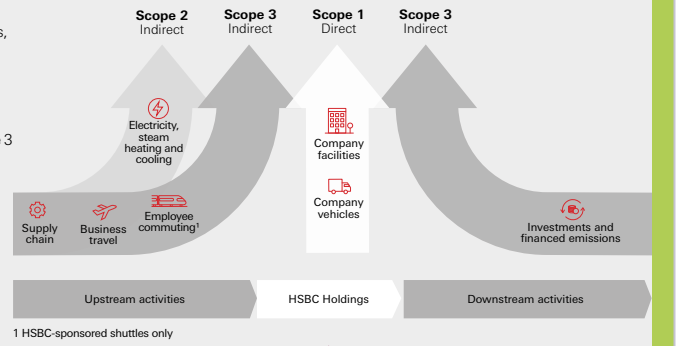
Wholesale loan exposure to transition risk sectors and customer questionnaire responses

	Automotive	Building and construction	Chemicals	Metals and mining	Oil and gas	Power and utilities	Total
Wholesale loan exposure as % of total wholesale loans and advances to customers and banks[1,2,3]	≤3.1%	≤4.0%	≤3.4%	≤2.5%	≤3.4%	≤3.2%	≤19.6%
Proportion of sector for which questionnaires were completed[4]	42%	44%	32%	45%	42%	40%	41%
Proportion of questionnaire responses that reported having a board policy or a management plan[4]	68%	81%	77%	54%	84%	93%	77%
Sector weight as proportion of high transition risk sector[4]	16%	20%	18%	13%	17%	16%	100%

The table outlines results from a corporate survey from HSBC to gauge the scale of impact of transition risk against the six sectors where HSBC has identified as being most exposed to transition risk. This shows that HSBC is monitoring the potential impacts on its operations through monitoring the effect on its customers.

Explaining scope 1, 2 and 3 emissions
To measure and manage our carbon emissions, we follow the Greenhouse Gas Protocol global framework, which identifies three scopes of emissions. Scope 1 represents the direct emissions we create. Scope 2 represents the indirect emissions resulting from the use of electricity and energy to run a business. Scope 3 represents indirect emissions attributed to upstream and downstream activities taking place to provide services to customers. Our upstream activities include business travel and emissions from our supply chain including transport, distribution and waste. Our downstream activities are those related to investments and financed emissions.

For further details, see our *ESG Data Pack* at www.hsbc.com/esg.



1 HSBC-sponsored shuttles only

HSBC has identified its operations that contribute to its scope 1, 2 and 3 emissions with the following narrative discussing how it intends to reduce emissions in the lead-up to its 2030 ambition. It is still a 'work in progress' as HSBC continues to review its supply chain methodology but provides users with insight into how HSBC is tracking and monitoring reduction targets.

Source: Annual Report and Accounts 2020, pages 19 and 45

Risk reporting

Main principle

Risk management processes shall be structured to include timely, accurate and useful risk reporting to enhance the quality of decision-making and to support management and oversight bodies in meeting their responsibilities.

The appropriate level of risk reporting is driven by the expectations of the board and the ARAC in terms of nature, source, method and frequency. Information collected and presented should be accurate and robust and be able to withstand challenge.

Key climate change considerations

Internal reporting

Climate change risk reporting should cover: the key performance metrics that are used to monitor the risk; the performance trend of these metrics (for example performance against Outcome Delivery Plans); strategic-level performance analysis and implications; any exceptions (including breaches, waivers and risk acceptance); and remediation plans or pathways. The *Orange Book* requires that "principal risks should be subject to 'deep dive' reviews by the board and Audit and Risk Assurance Committee, with those responsible for the management of risks and with appropriate expertise present at an appropriate frequency depending on the nature of the risk and the performance reported."[39] Quality internal climate change reporting should support the board's assessment of whether decisions are being made within its risk appetite to successfully achieve the organisation's objectives on climate change.[40] Reporting processes and formats should also be clearly documented within existing risk management documentation.

Questions ARACs could ask

For further questions see Appendix One

Internal reporting

- Q Is climate change risk reporting similar in style to other principal risks, so that we can assess how progress is being made with objectives?
- Q How regularly are climate change risks reported? Is this frequent enough to inform robust decision-making?
- Q Does management conduct deep-dive reviews of climate-related risks, and present the review findings to the board and ARAC?
- Q How have climate-related risks and assumptions been factored into financial information such as budgets and forecasts in the short-, medium- and long-term?
- Q How satisfied are we with the quality of information reported? Is the information relevant, reliable, comparable, evidence-based, neutral, and understandable?

48%

of chairs had limited familiarity with the current climate-related reporting requirements in the public sector. This increased to **64%** when asked the same question about planned climate-related reporting requirements in the public sector

39 See footnote 29, page 22.
40 See footnote 29, page 22.

Risk reporting *continued*

Example

A summary of Mondi's key matters from the Sustainable Development Committee

Mondi's board leadership and governance structure includes a dedicated Sustainable Development Committee which oversees the strategy and targets related to climate-related matters. The example gives the reader an insight into the key matters discussed at Committee level throughout the year, as well as decisions made.

Sustainable Development Committee activity

Set out below are some of the key matters addressed by this committee.

Safety performance and serious incidents

- Reviewed detailed reports on the fatalities at our Syktyvkar and Richards Bay mills and received follow up reports on the outcome of the investigations into each incident, management's response and actions taken.
- Monitored the number of COVID-19 cases across the Group, actions taken to protect employees and contractors and the key focus areas in this regard, particularly the higher risk associated with the annual maintenance shuts, giving the committee comfort that all the appropriate measures were in place.
- Received regular reports on safety performance at Group and business unit level, including individual mill performance, classification of incidents and peer comparisons, giving the committee insight into the safety culture and specific sites that required further focus.
- Considered and agreed the safety milestones and leading and lagging indicators for the next reporting period.

Sustainable development governance and risks

- Reviewed the material sustainability issues, risks and opportunities.
- Received a presentation from Mondi's legal advisers on the emerging regulatory regime in relation to ESG matters, focusing on those developments likely to impact Mondi and its investors, including EU and UK disclosure requirements, particularly the forthcoming requirement to report in line with the recommendations of the Task Force on Climate-related Financial Disclosure (TCFD), the European Green Deal and the EU Taxonomy.
- Reviewed those elements of the Group's Code of Business Ethics reserved for review by the committee, concluding that they remain appropriate and aligned with the culture of the Group.
- Reviewed and approved the Group's human trafficking and modern slavery statement.
- Reviewed and approved the annual sustainable development reporting.
- Reviewed the committee's terms of reference and performance, concluding that the terms remain appropriate and that the committee has covered all matters required of it.
- Considered and agreed the committee's annual work programme.

Climate change

- Reviewed climate-related risks and opportunities and the potential impacts on the business in line with the TCFD recommendations (see page 59 for more information).
- As part of the regular reviews of environmental performance, reviewed KPIs that track the Group's progress in reducing its greenhouse gas emissions in line with its science-based targets.
- Agreed to recommend to the Board the inclusion of climate change as a specific action area within MAP2030 and considered and agreed the supporting commitments and targets (see pages 26-27 for more information).

Environmental performance

- Received regular reviews on performance against each of the environmental key performance indicators and commitments.
- Received information on any material environmental incidents and considered management's response.

Policies and commitments

- Reviewed the achievements against the Growing Responsibly model 2020 commitments (see pages 44-45 for more information).
- Reviewed and agreed to recommend to the Board MAP2030, developed based on a detailed materiality analysis and stakeholder consultation (see pages 42-43 for more information).
- Reviewed Group sustainable development policies and approved amendments to reflect best practice.

Forestry

- Reviewed updates on the forestry operations in Russia and South Africa.

Stakeholder relationships

- Received a presentation from WWF South Africa on the work being undertaken in respect of water security, highlighting the key challenges facing the country in this respect and the work being undertaken in response through Mondi's partnership with WWF.
- Reviewed the Group's relationships and engagement with key stakeholders, including governments and non-governmental organisations, focusing on the partnerships that will be required to support Mondi in achieving MAP2030 and the primary areas for engagement.
- Reviewed our social and community engagement, focusing in particular on COVID-19 related community contributions and the review of Mondi's policies, procurement processes and grievance mechanism by the Danish Institute for Human Rights.
- Reviewed Mondi's ESG ratings in order to understand which ratings are most important to our stakeholders, how we perform and where there is potential for improvement.

Product stewardship

- Received a report on the Group's product stewardship practices, focusing in particular on Mondi's response to the Single-Use Plastics Directive, including through engagement with regulators and understanding our customers' commitments in this regard.

Source: Report and financial statements 2020, page 125

Risk reporting *continued*

External reporting

Climate-related risks should be reported transparently, accurately and consistently throughout the organisation's Annual Report and Accounts. In annual reports, organisations should describe the status and trajectory of their principal risks, in addition to any emerging risks that may affect future performance. Reporting requirements around climate change are likely to become more extensive in future years. By applying a thorough forward-looking approach to climate change risk reporting, organisations will be able to provide meaningful information which can be evolved, in addition to demonstrating to stakeholders that they have a clear strategy for responding to climate change risks.

The Task Force on Climate-related Financial Disclosures (TCFD) has produced a set of good-practice principles for organisations looking to extend their climate change reporting. A significant proportion of mandatory requirements will be in place in the private sector by 2023. The TCFD recommends that disclosures cover four areas: governance, strategy, risk management, and metrics and targets.[41] The TCFD reporting guidance is not mandatory for public sector organisations.

Although not mandatory for annual reporting disclosures, under the Climate Change Act 2008, and in conjunction with the National Adaptation Programme,[42] certain bodies, including some government bodies, are required to produce five-yearly climate change adaptation reports.[43] These reports may provide some examples on how to transparently articulate the current and future predicted effects of climate change, and management's proposals for adapting to those effects.

Specific reporting requirements for government organisations are outlined in Part Four, in addition to useful guidance on how organisations can improve their reporting of climate change risk.

Questions ARACs could ask

For further questions see Appendix One

External reporting

- Q Is climate change clearly embedded within the organisation's strategy and strategic objectives? Can readers see a clear link between the strategy, objectives and key performance indicators?
- Q Is there clear articulation of how climate change risks are identified, monitored and managed across the organisation?
- Q Is the information in the financial statements verifiable and consistent with commitments that are disclosed in the annual report?
- Q Where climate change risks give rise to a material financial impact, is this appropriately and accurately reflected in the financial statements?[44]
- Q Has management clearly explained material assumptions and uncertainties relating to estimates affected by climate change? For example, does it include relevant sensitivity analysis so users can appreciate the scale of impact?

54%

of chairs were moderately familiar with the planned climate-related reporting requirements

41 See footnote 6, Figure 4.
42 Climate change: second national adaptation programme (2018 to 2023) – GOV.UK (www.gov.uk).
43 Climate change adaptation reporting: third round – GOV.UK (www.gov.uk).
44 See footnote 38.

Risk reporting *continued*

Example

Mondi's Task Force on Climate-related Disclosures statement

Reporting our sustainability performance

This section provides a detailed insight into the evolution of our sustainable development approach and our performance in 2020.

The following four pages, from 40 to 43, summarise our established approach to engaging with key stakeholders and how our directors have fulfilled their duties under Section 172 of the Companies Act 2006 in 2020. The insights and dialogue we cultivate through these engagement activities have continued to define our sustainability focus.

Our Growing Responsibly model (2016-2020)

The Growing Responsibly model (GRM) has been the framework through which we have responded to sustainability challenges and opportunities these past five years. It has enabled us to clearly demonstrate, monitor, improve and communicate our sustainability performance across the value chain.

To measure our progress within the GRM, we defined 10 Action Areas with supporting commitments until 2020 and a carbon emissions commitment that runs to 2050. A consolidated view of our performance against these commitments over the past five years can be found on pages 44 to 45.

This year, we have reorganised our sustainability content in our Integrated report to better reflect the informational needs of our audiences and communicate a more integrated narrative, demonstrating the intrinsic link between sustainability and how it drives our business model. Consequently the Action Areas which follow have been grouped considering their inherent relationship or resource attributes.

Growing Responsibly model
Page 44-45

The Mondi Action Plan 2030

The learnings from our GRM have helped to shape our next set of commitments, the Mondi Action Plan 2030 (MAP2030). This is our new framework to address the challenges and opportunities of a new decade. Further details of the three focus areas and targets underpinning this new framework, along with the robust process undertaken to develop them, can be found on pages 19 to 21 of Mondi's 2020 Sustainable Development report.

MAP2030
Page 26-27

TCFD disclosure

We continue to assess the financial implications of climate-related risks and opportunities on our business and have provided a disclosure table later in this section.

Climate change
Page 58-60

Principal risks
Page 80

External assurance

Our Sustainable Development (SD) report provides a comprehensive view of our approach to sustainable development and our performance in 2020. ERM CVS has provided assurance on selected information and key performance indicators as well as checked that the SD report is in accordance with the Global Reporting Initiative (GRI) Standards: Core option and the Sustainability Accounting Standards Board (SASB): Containers & Packaging Industry Standard, and that information included in our Integrated report is consistent and comparable. We have also prepared an index mapping our GRI and SASB disclosures.

Sustainable Development report
www.mondigroup.com/sd20

Our GRI and SASB index
www.mondigroup.com/sd20-report-hub

Materiality

Our material issues articulate what matters most to our business and our stakeholders. We reviewed and validated these issues through a comprehensive materiality assessment in 2018, followed by an extensive internal engagement process as part of developing our new commitments in 2019. In early 2020 we carried out a comprehensive benchmarking process involving customers, peers and ESG ratings that shaped our MAP2030 framework.

Sustainable Development report
www.mondigroup.com/sd20

Non-financial information statement

In accordance with Sections 414CA and 414CB of the UK Companies Act 2006, the required non-financial information disclosures can be found integrated throughout the Strategic report.

A summary of key areas of disclosure is set out below:

Business model	Page 18-21
Information relating to environmental matters	Page 58-65
Information relating to employees	Page 46-50
Information relating to social matters	Page 54-55
Information relating to respect for human rights	Page 49-53
Information relating to anti-corruption and anti-bribery matters	Page 38
Principal risks	Page 74-85
Non-financial key performance indicators	Page 36-37 and 44-65

Distinct section on reporting that covers how the annual report and accounts format has been altered to cover increasing focus on climate, which also provides details of a separate Sustainable Development report.

Specific references to Task Force on Climate-related Disclosures reporting on pages 58 onwards of Mondi's annual report.

Source: Report and financial statements 2020, page 39

Continual improvement

Main principle

Risk management shall be continually improved through learning and experience.

Key climate change considerations

Climate change risk is certain to increase over time, which makes continual improvement through learning and experience vital. Organisations should identify gaps in skills and knowledge, and plan for how these can be addressed. This will increase their ability to respond effectively to climate change risk, and make the most of any opportunities. Organisations should decide how regularly to review their climate change risk identification and assessment, to make sure that they are learning any lessons from their experience, and ensure that the response to climate change risk remains appropriate in light of their strategy to adapt to and mitigate climate change. Learning lessons from other organisations (within government and across the broader private sector) is particularly important when managing the risk of climate change given its cross-cutting impact across not only the UK, but the world.

Questions ARACs could ask

For further questions see Appendix One

- Q How regularly is climate change risk re-assessed? Is this frequent enough?
- Q How does management build experience and learning into the climate change risk assessment process?
- Q Is climate change risk incorporated within the organisation's overall approach to continually improving its risk management processes?
- Q Are there any lessons to be learned from government's response to other cross-cutting challenges, such as COVID-19 and EU Exit?
- Q Is there a plan to assess the maturity of management's approach to climate change risk management?

48%

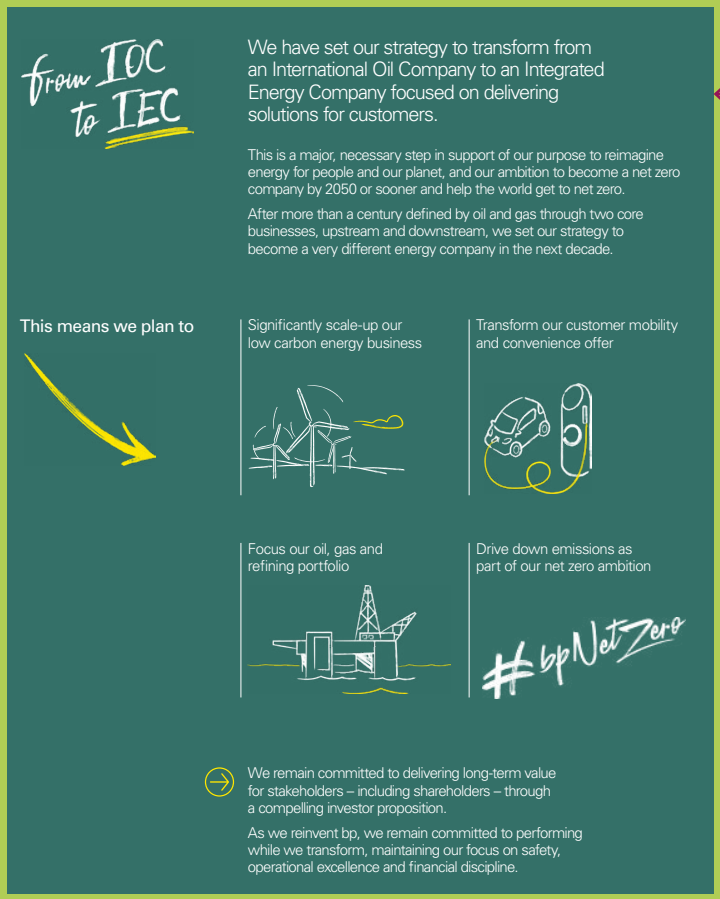
of ARAC chairs had limited familiarity with the current reporting requirements for climate-related disclosures in the public sector

Governance and leadership | Integration | Collaboration and best information | Risk identification and assessment | Risk treatment | Risk monitoring | Risk reporting | Continual improvement

Continual improvement *continued*

Example

BP's revised integrated strategy



BP has re-evaluated its strategy with sustainability at the forefront to take into account the impact of climate change and other environmental matters on its business operations. It has identified a need to move to a fully integrated model.

In announcing its new net zero ambition, BP identified a need to move from an International Oil Company to an Integrated Energy Company. BP has made changes to improve its strategy to reflect the evolving impacts of climate change.

From IOC to IEC

We began 2020 operating under our previous strategy, announced in 2017, which focused on four strategic priorities:

- Growing advantaged oil and gas in the Upstream.
- Market-led growth in the Downstream.
- Venturing and low carbon across multiple fronts.
- Modernizing the whole group.

In February 2020, we announced our new ambition to be a net zero company by 2050 or sooner and to help the world get to net zero. And in August we announced a new strategy to get us there, which builds on the foundations we've developed since 2017.

Source: Report and financial statements 2020, pages 1 and 15

Part Four

Key guidance and good practice materials

Organisations across the public sector will find the following guidance useful when thinking about reporting of climate-related risks.

Existing reporting guidance for government

HM Treasury's Financial Reporting Manual provides a comprehensive guide to reporting requirements for government organisations. Specific requirements around climate and sustainability reporting can be found throughout section 5.4.

Sustainability Reporting Guidance. The purpose of this guidance is to assist with the completion of sustainability reports in the public sector. It sets out the minimum requirements, some best practice guidance and the underlying principles to be adopted in preparing the information. This guidance is closely aligned with the reporting commitments detailed in the Greening Government Commitments.

Accounting for the Effects of Climate Change. This is supplementary guidance to HM Treasury's Green Book. This guidance is intended to support analysts and policymakers in making sure that the effects of climate change are taken into account when appraising policies, programmes and projects.

Good practice materials

Task Force on Climate-related Financial Disclosures (TCFD)

TCFD's guidance is not currently a requirement for government organisations. However, it includes a number of recommendations on climate-related reporting and is a highly relevant source for insights into how organisations can enhance their reporting of climate-related risk.

Financial Reporting Council (FRC) Climate Thematic

This review by the FRC considered the capacity for boards, companies, auditors, professional bodies and investors, to act as drivers of change in climate-related areas.

Good Practice in Annual Reporting

Our guide includes good practice examples of how organisations can enhance their reporting of risk, and includes specific examples relating to sustainability.

Enterprise Risk Management – Applying enterprise risk management (ERM) to environmental, social and governance-related risks

The guidance is relevant for all entities, including government bodies, and is intended to address the need for entities to integrate environmental risks, such as climate change, into their existing risk management framework.

Independent Assessment of UK Climate Risk

The third independent assessment of the UK's climate risks under the Climate Change Act, coordinated by the Climate Change Committee.

Climate Disclosures Standards Board: accounting for climate

The Climate Disclosures Standards Board issued guidance on how climate-related matters can be incorporated into financial statements.

ICAEW Climate Hub

Various resources, guidance and information from the Institute of Chartered Accountants in England and Wales (ICAEW) on climate change.

Appendix One

Complete list of questions that Audit and Risk Assurance Committees can ask

Governance and leadership

Governance and leadership:

- Q Is there a clear understanding of what the organisation's requirements are in terms of government policy?
- Q How have climate-related risks and opportunities been identified and factored into the organisation's strategy?
- Q How does the current risk management process support the emergence of significant risks such as climate change, and what governance processes are in place to ensure that emerging risks and opportunities are captured, assessed and verified?
- Q How effective is the risk culture promoted by leadership in supporting debate, discussion and understanding of climate change as an emerging risk? This could include:
  - having enough resources allocated for climate risk assessment and controls implementation;
  - having dedicated training and education processes for staff members; and
  - providing clear written procedures defining accountability, risk appetite and responsibilities to provide a common 'risk language' across all organisational levels.
- Q Is it clear where accountability lies for climate-related risks, and are there appropriate roles and responsibilities to ensure that climate change risk is effectively managed?
- Q How does management gain and maintain an appropriate level of understanding of climate-related risks and opportunities that are likely to have a material impact on the organisation?
- Q Has management ensured the proper allocation of skills and resources to manage climate change risk?
- Q Are there any factors that could weaken or diminish the organisation's ability to manage climate-related risk (for example, ineffective processes or capacity restraints)? How does management identify, monitor and respond to these factors?
- Q Can management apply any lessons from the impact of COVID-19 to climate change? For example, do the changes in employee working preferences provide opportunities which can be applied to climate change adaptation strategies?

Assurance:

- Q How does the board gain assurance over the management of climate-related risk in the organisation? For example:
  - assessing the organisation's approach to managing climate-related risks;
  - reviewing board briefings on relevant climate change matters, including results of climate risk deep-dives; and
  - assessing management's use of data and consideration of data integrity to gain assurance over any potential impact.
- Q Does the organisation's Internal Audit function include climate-related issues in its planned programme of work?
- Q Is management tracking and monitoring external recommendations relating to climate change?
- Q Is there clarity of roles, responsibilities and accountabilities for each component of the 'three lines of defence' as part of the overall risk management of climate change?[45]

45 See the *Orange Book,* Annex 2.

Governance and leadership *continued*

Assurance *continued*:

- Q Has external expertise been applied to analysis of climate-related risks (including review of climate-related disclosures)? Has the appropriateness of their expertise been assessed?
- Q Has the organisation discussed climate change risk (including review of climate-related disclosures) with the National Audit Office or any other external audit providers?

Integration

- Q How does management build awareness and understanding of emerging risks such as climate change across the organisation?
- Q How does management ensure that climate change considerations are clearly factored into its risk appetite?
  - Is the organisation's risk attitude and appetite over climate change-related matters understood by the wider workforce, particularly key decision-makers?
  - Is management able to explain the impact of climate change risk on decision-making across the organisation?
- Q Does management understand the risks and opportunities associated with delivering government's policy objectives on climate change?
- Q How is climate risk embedded in climate-related policy development (if applicable)?
- Q Is there a common understanding of climate change risk across the organisation, and does management understand how it can impact on different aspects of operational delivery?
- Q What processes does the organisation have in place to embed climate-related risks throughout the organisation?
- Q Do the organisation's strategic objectives, budgets and delivery plans reflect management's consideration of climate change risks and opportunities?

Collaboration and best information

- Q How does management keep up to date with climate change-related developments, policy and regulatory changes?
  - How does management monitor future cost implications of achieving net zero in line with such changes?
- Q How confident is management in its understanding of the organisation's responsibilities in delivering wider departmental or government policy objectives, such as achieving net zero by 2050, and the Greening Government Commitments?
- Q How does management identify external risks which have the potential to impact it from beyond the organisation, for example in its supply chain or – in the case of departments – within arm's-length bodies?
- Q Has management considered data sharing arrangements with other government bodies to support a joined up and collaborative approach to climate risk management?
- Q Has management formed networks with other organisations to share knowledge and expertise so they can effectively identify and manage climate change risks?
- Q Does management have a strategy for seeking out expertise beyond its own organisation as part of the process to identify and manage climate change risks?
- Q How does management get an awareness of what matters to its stakeholders on climate change risk?
  - What is management doing to respond to those expectations?
- Q Are there any aspects of management's current approach to collaboration with other parties which should be amended to take account of the specific challenges introduced by the risks of climate change?
- Q Does management have the relevant expertise to consider climate-related risks fully and in a robust manner? Has management considered what its knowledge gaps are and whether external advice or expertise is needed?

Risk identification and assessment

Risk identification:

- Q What is management's process for identifying climate-related risks?
  - Does this process extend across the whole organisation, so all potential climate-related risks can be identified?
  - For departments, does this include risks within arm's-length bodies?
- Q Has management considered all potential adaptation- and mitigation-related risks that could be relevant to the organisation?
- Q Are the individuals involved in the process of identifying and assessing climate-related risks suitably qualified?
- Q Can management demonstrate that it has conducted a robust assessment of all climate change risks?
- Q What is management's process for identifying external factors that would impact on the consideration of climate change as a risk?
- Q If the organisation considers climate change as an emerging risk, how confident are we that management has a clear understanding of the indicators which would cause it to escalate to a principal risk?
- Q Can management articulate which climate-related risks are most significant to the organisation and why?[46]
- Q Does management conduct deep-dive reviews over climate change to help identify vulnerabilities and risk exposures?
- Q If no material climate-related risks are identified, can management explain why this assessment is appropriate?
- Q What timeframe (short-, medium-, and long-term) does management use in its identification and assessment process?
- Q Has management identified any crossovers from its understanding of climate change risk to other principal risks managed by the organisation?

Risk assessment:

- Q Can management demonstrate that a robust assessment of all climate change risks has been conducted?
- Q How are climate change risks measured?
  - Has management considered a range of methods to analyse the impact of climate-related risks?
  - Are we confident that that the methods used to measure the risks are appropriate for climate-related issues?
  - Are we confident that management has good-quality data to be able to calculate the impact of climate-related risks to the organisation?
- Q Are we confident that management understands what data it needs to collect to be able to calculate the impact of climate-related risks to the organisation?
  - Does management know how climate-related risks might impact the value of the organisation's assets and liabilities?
  - What is the impact on revenue and expenditure, for instance as a result of environmental tax measures or the impact of rising temperatures on productivity?
  - Does the implementation of climate-related policy, or other deliverables, give rise to any new liabilities or provisions?
- Q Has management benchmarked its risk analysis approach against other organisations across government or similar organisations in other sectors?
- Q Has management measured the impact of climate change adaptation and mitigation on future projects or programmes? Is this appropriately reflected in future budgets and spending plans? For example, this could include spend on investments in new technology, changes to transport planning or land use and so forth. See Part One for further details.
- Q How confident are we that management understands and considers the inherent uncertainty associated with risks arising from climate change?
  - Does management conduct horizon-scanning and scenario analysis to consider the range of outcomes?
  - Has management conducted deep-dive reviews (where required) and assessed the results to help it understand the impact and severity of climate-related risks on the organisation, and how they should be prioritised?

46 See footnote 38.

Risk identification and assessment *continued*

Q Are risks and opportunities stress-tested across a sufficiently severe yet plausible range of climate change scenarios? How robust are these scenarios and to what extent are the scenarios relevant to the organisation and its future strategy?

Risk assessment – evaluation:

Q How is the organisation's risk appetite or tolerance levels considered when evaluating climate-related risks?

Q How confident are we that the organisation has the skills and expertise to evaluate the climate-related risk identified? Is there a process for sourcing this expertise to ensure the evaluation of the risk is appropriate?

Q How confident are we that decision-makers across the organisation understand the organisation's risk appetite and tolerance in the context of climate change?

Q Does the organisation have the skills and expertise to evaluate the climate-related risk identified? Is there a process for sourcing this expertise to ensure the evaluation of the risk is appropriate?

Risk treatment

Q Climate change targets by their nature can be long-term. Is management clear on what represents good progress against its climate change targets?

Q How confident are we that management can demonstrate a clear rationale for the treatment activities and response to climate change risks, including the benefits it expects to gain?

Q Have response plans been developed from the results and impact of climate risk deep-dives?

Q Has enough consideration been given to the uncertainties that exist in this area?

- How flexible is management's current risk response strategy in dealing with the unpredictability of climate change risks?

Q Are climate-related risk responses aligned with the organisation's risk appetite?

- Is there any indication that management needs to reassess its risk appetite to respond appropriately to climate change risk, particularly given the unpredictable nature of the risks?

Q Has management developed appropriate performance indicators and metrics for climate change risks?

- How are these metrics determined in the context of the organisation's operations?
- How does management set targets for climate change performance factors, and are these targets credible?
- How does management verify progress against these targets?

Q With extreme climate events likely to worsen over time and potentially at an accelerated pace, has management considered how responding to these will impact on other areas of the organisation, and the management of other principal risks? Management should consider how trade-offs between net zero and other strategic priorities will be managed.

Q Has management developed a climate change adaptation strategy for the organisation, and have climate change risk treatment and response plans been integrated as part of this?

Risk monitoring

- Q Does management understand how its overall risk profile is likely to change as a result of climate change risk?
- Q Has management defined core performance metrics, and key risk and control indicators for climate-related risks, and have risk appetite and tolerance been factored in?
  - How do those metrics influence strategic decision-making, investment plans and budget considerations?
- Q Does management conduct deep-dive reviews over climate-related risks? Have results of previous reviews, risk responses or remediation plans been assessed for progress and effectiveness? Are plans updated, monitored and reported?
- Q How are the results of climate change risk monitoring shared with the rest of the organisation?
  - How does the department monitor risks within its arm's-length-bodies and ensure that climate change risks are escalated and aggregated effectively?
  - Is there a feedback loop between the results of monitoring, the assessment of the residual risk, the effectiveness of the risk management activities and the decision-making?
- Q How does the department ensure that its arm's-length bodies communicate climate-related risks? How does the department assess risks (including climate-related risks) from different organisations or arm's-length bodies in a consistent way?
- Q How often does management re-assess the impacts of existing climate-related risks? For example, if the organisation is impacted by legislative changes or new government targets, does management track these changes?
- Q Is there any benefit to be gained from a specific oversight group or board with responsibility for climate change to monitor progress against climate change risks?

Risk reporting

Internal reporting

- Q How does the organisation's current risk reporting process encompass climate-related risks?
- Q Does management conduct deep-dive reviews of climate-related risks, and present the review findings to the board and the ARAC?
- Q Is climate change risk reporting similar in style to other principal risks, so the board can assess how progress is being made with objectives?
- Q How regularly are climate change risks reported? Is this frequent enough to inform robust decision-making?
- Q How have climate-related risks and assumptions been factored into financial information such as budgets and forecasts in the short-, medium- and long-term? How does management report on the total costs and benefits of government policies that contribute to achieving net zero?
- Q How satisfied are we with the quality of information reported?
  - Is the information relevant, reliable, comparable, evidence-based, neutral, and understandable?
- Q Is there consistency of reporting on net zero between the organisation and other similar bodies? Consistency of reporting facilitates understanding across the public sector and aids comparability.

Risk reporting *continued*

External reporting – Annual Report

- Q Is the information presented on climate change and sustainability compliant with all mandatory reporting requirements relevant to the organisation? For instance, HM Treasury's *Financial Reporting Manual* for government organisations.
- Q Has management set out how the board and other relevant climate-related committees oversee climate change risks? Does this include how often climate issues are being discussed and the composition of any specific committees or boards with oversight responsibilities?
- Q For Departments, can management explain how they oversee and monitor climate-related challenges faced in its arm's-length bodies?
- Q If the organisation is bound by specific compliance requirements, does this adequately reflect climate-related risks and opportunities that stakeholders would expect?
- Q Is climate change clearly embedded within the organisation's strategy and strategic objectives? Can readers see a clear link between the strategy, objectives and key performance indicators?
- Q Is the information in the financial statements verifiable and consistent with commitments that are disclosed in the annual report?
- Q Has management articulated how the organisation's strategy could be impacted by climate-related risks and how flexible the strategy is to respond to significant changes?
- Q Is there evidence that management has considered the short-, medium-, and long-term implications of climate change on the organisation?
- Q Is there clear articulation of how climate change risks are identified, monitored and managed across the organisation?
- Q Is there a risk of 'greenwashing' in the extent that the organisation explains its environmental progress, its purpose, or the nature of its services?
- Q Has management explained what it deems to be the principal and emerging climate-related risks and how it has determined this scale?
- Q Has management set out its risk management process for climate-related risks, including how it decides on the most appropriate response?
- Q Has management disclosed the key performance metrics relating to its climate change risks? Has management included historical data for trend analysis?
- Q Are there references to the wider government goals or policy objectives that the organisation is responsible for delivering? Where the organisation makes a climate change commitment, does it clearly explain what the implications are on the organisation in delivering the goal?
- Q Does management believe that the climate-related disclosures in the annual report and accounts are relevant, reliable, comparable, verifiable, fair, balanced and understandable?

External Reporting – Financial Statements

- Q Where climate change risks give rise to a material financial impact, is this appropriately and accurately reflected in the financial statements? For example, an identified risk of rising sea levels and an increase in flooding could impact the valuation of buildings residing near to a floodplain and may require significant impairments.[47]
- Q Has management fully considered the areas within their financial statements which could be impacted by climate change risks?[48]
- Q Has management clearly explained material assumptions and uncertainties relating to estimates affected by climate change? For example, does it include relevant sensitivity analysis so users can appreciate the scale of impact?
- Q Where climate change has significantly affected the valuation of an organisation's assets and liabilities, is this adequately disclosed?
- Q Where climate change could affect an organisation's ability to continue to operate, is there adequate and appropriate disclosure in the accounting policies on the organisation's going concern status?

47 See footnote 38.

48 Accounting for climate, Climate Disclosure Standards Board (cdsb.net) – CDSB guidance provides examples of how climate-related matters can be integrated into financial reporting.

Continual improvement

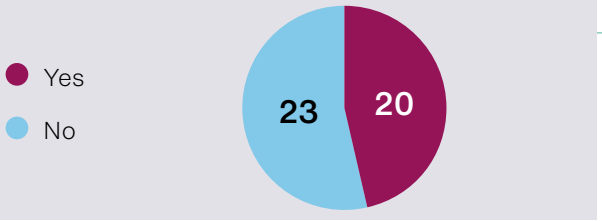
- Q How regularly is climate change risk re-assessed? Is this frequent enough?
- Q How does management build experience and learning into the climate change risk assessment process?
- Q Is climate change risk incorporated within the organisation's overall approach to continually improving its risk management processes?
- Q What activities are planned to ensure that management is continually keeping up-to-date with developments in climate change, and how these may impact on its assessment of its own climate change risks?
- Q Are there any lessons to be learned from government's response to other cross-cutting challenges, such as COVID-19 and EU Exit?
- Q Is there a plan to assess the maturity of management's approach to climate change risk management?
- Q Does management have an approach to respond to any gaps in skills or knowledge that it identifies?

Appendix Two
Climate change survey results

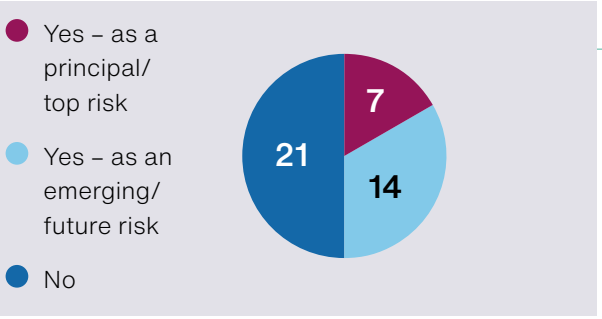
Results of the climate change survey completed by Audit and Risk Assurance Committee chairs.

QUESTIONS

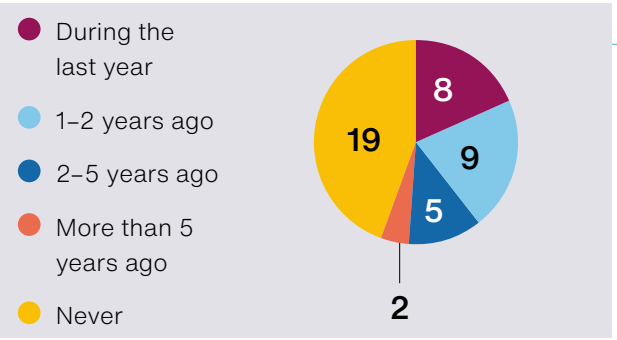
1 Does the organisation have a dedicated executive leader accountable for sustainability and climate change?



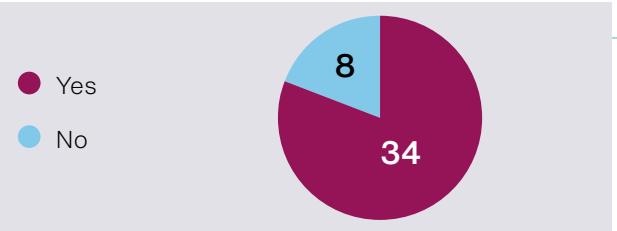
2 Is climate risk included in the organisation's reporting of risks?



3 When were risks associated with climate change first discussed at an ARAC meeting?



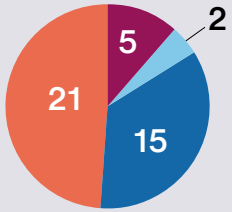
4 The ARAC considers that climate-related risks are relevant to the organisation



QUESTIONS

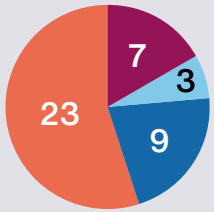
5 Does the Board-approved risk appetite statement contain a qualitative statement on climate risk, or an approach to sustainability in general?

- Both a statement on climate risk and a general approach to sustainability
- Only a statement on climate risk
- Only a general approach to sustainability
- Neither



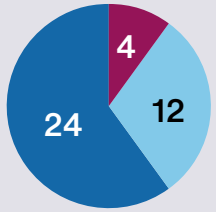
6 Does the organisation have a climate risk policy or sustainability risk policy?

- Both a statement on climate risk and a general approach to sustainability
- Only a statement on climate risk
- Only a general approach to sustainability
- Neither



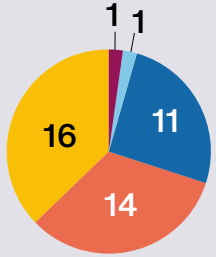
7 If the organisation does have a climate risk policy or sustainability risk policy, are they presented to the ARAC for review and approval?

- Yes
- No
- Not applicable



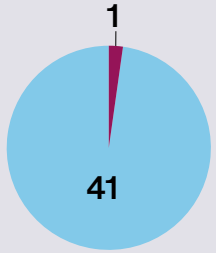
8 How often does climate change get discussed at ARAC meetings?

- At every meeting
- 2–3 times per year
- Annually
- Less often
- Never



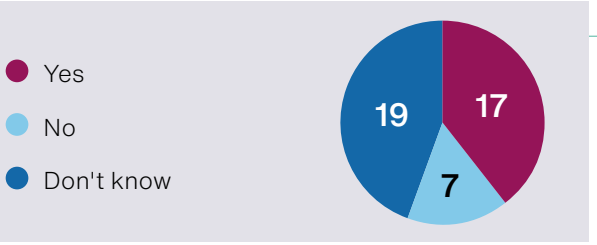
9 Has the ARAC undertaken a detailed discussion or deep-dive into climate change risk?

- Yes
- No

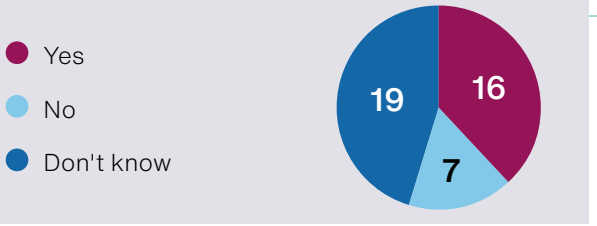


QUESTIONS

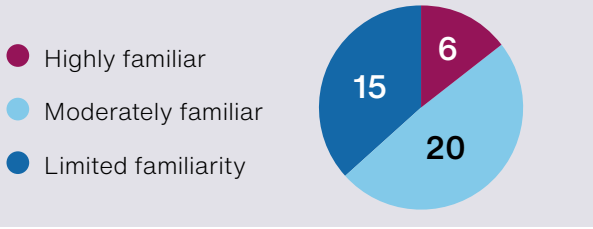
10 ARAC members know what to ask management about climate-related risks and the impacts on the department's operations



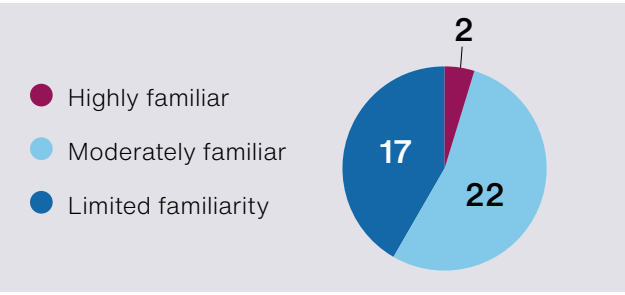
11 ARAC members know what to ask management about climate-related financial reporting and disclosures



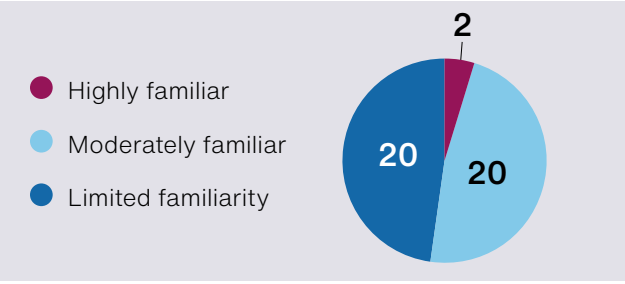
12 How familiar are you with current reporting requirements for climate-related disclosures generally?



13 How familiar are you with planned reporting requirements for climate-related disclosures generally?

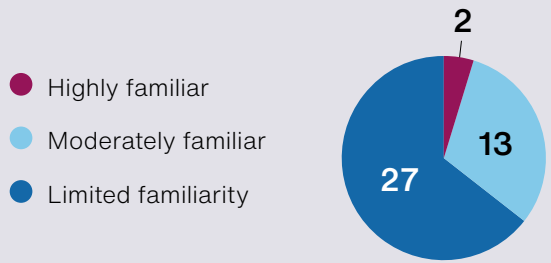


14 How familiar are you with current reporting requirements for climate-related disclosures in the public sector?



QUESTIONS

15 How familiar are you with planned reporting requirements for climate-related disclosures in the public sector?



Appendix Three
Further reading

You can find out more about our reports on our website. Below are a selection of our recent reports:

Local government and net zero in England

July 2021

This new report responds to a request from the Environmental Audit Committee to examine local government and net zero. It considers how effectively central government and local authorities in England are collaborating on net zero, in particular to:

- clarify the role of local authorities in contributing to the UK's statutory net zero target; and
- ensure local authorities have the right resources and skills for net zero.

The report does not examine how national and local government are collaborating on net zero in Scotland, Wales and Northern Ireland.

Reducing carbon emissions from cars

February 2021

This report examines how well the government has used public money to support the uptake of ultra-low emission cars and draw lessons for the future. It examines progress in increasing the take-up of ultra-low emission cars through the plug-in car grant; the development of charging infrastructure using government financial support; and the impact of increasing the sale of ultra-low emission cars on carbon emissions from the UK car fleet so far.

Environmental tax measures

February 2021

This report examines how HM Treasury and HM Revenue & Customs manage tax measures with environmental objectives, including the work undertaken to design, monitor and evaluate them. It also explores how the exchequer departments use their resources to manage the relationship between the wider tax system and the government's environmental goals, including its statutory commitment for the UK to achieve net zero greenhouse gas emissions by 2050.

Achieving net zero

December 2020

This report is intended to support Parliamentary and public scrutiny of government's arrangements for achieving net zero. It is a companion to our report *How government is organised to achieve its environment goals*. We have applied our experience from auditing cross-government challenges to highlight the main risks government needs to manage if it is to achieve net zero efficiently and effectively. In the future, we will assess how well government is managing the risks highlighted in this report, and the value for money of individual government interventions aimed at reducing emissions.

Achieving government's long-term environmental goals

November 2020

This report examines how government has set itself up to deliver its long-term environmental goals. These are broad and complex issues and so the aim is to highlight the most significant potential strengths and areas for improvement, as well as key risks that government will need to manage, drawing on the NAO's experience of auditing large-scale, longer-term or cross-government projects and programmes.

Managing flood risk

November 2020

The report covers flood risk management in England. It does not cover government's emergency response to flooding, issues relating to flood insurance, planning regulations or the management of coastal erosion. In addition to this report, we have produced an interactive data visualisation, which presents a range of information on flood risk management in England.

Environmental Sustainability Overview – Ministry of Defence

May 2020

Responding to a request by the Environmental Audit Committee (EAC), this report gives an overview of the approach taken by the Ministry of Defence to environmental sustainability. This is the sixth in a series of sustainability overviews we have produced for the EAC, each of which examines how different parts of government fulfil their sustainability remit.

Water supply and demand management

March 2020

In this report, we set out the challenges facing the water industry in England and assess how the Department for Environment, Food & Rural Affairs is tackling them through its oversight of water regulators and the water companies. The report is both retrospective, looking at how effectively the government has achieved its objectives up to now, and forward-looking, examining how prepared it is for the greater challenges it faces in the future as a result of climate change and population growth.

Environmental metrics: government's approach to monitoring the state of the natural environment

January 2019

This report sets out our expectations of good practice for an effective system of performance metrics based on our experience of reviewing government approaches to managing performance (Part One). It also examines the government's current environmental metrics (Part Two) and its plans for developing new metrics (Part Three). We focus on the metrics that relate to England or are UK-wide.

Rolling out smart meters

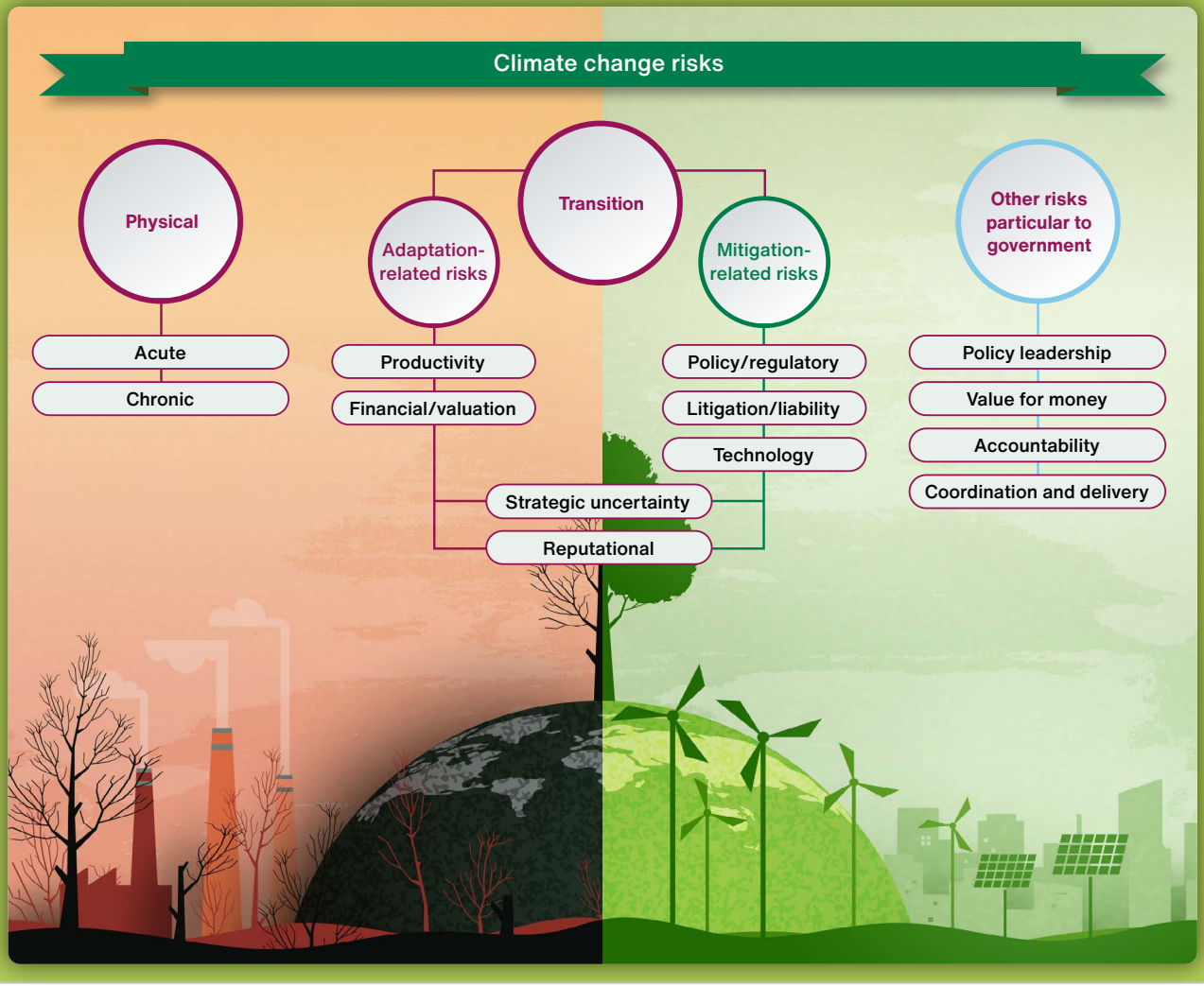
November 2018

The Department for Business, Energy & Industrial Strategy (the Department) forecast in 2013 and 2016 that the Smart Metering Implementation Programme would require £11 billion of investment in installations, equipment and systems. The costs are equivalent to £374 per dual fuel household, but these costs are expected to be more than offset by reduced energy consumption and operational cost savings for the industry. In 2013, the Department forecast that the total benefits of the programme would be £17.7 billion, creating net benefits of £6.7 billion. In 2016, it updated its analysis and forecast net benefits of £5.7 billion. The costs of the programme will mainly be incurred during the rollout phase, whereas most of the benefits will be spread over subsequent years. The benefits of the programme are therefore more uncertain than its costs. There is already some evidence that costs were underestimated in the 2016 analysis.

Appendix Four
Key takeaways

You can find more detail on the individual risks in Part One.

Risk taxonomy



Challenge questions

Governance and leadership

Risk management shall be an essential part of governance and leadership, and fundamental to how the organisation is directed, managed and controlled at all levels.

- Is there a clear understanding of what the organisation's requirements are in terms of government policy?
- How have climate-related risks and opportunities been identified and factored into the organisation's strategy?
- How effective is the risk culture promoted by leadership in supporting debate, discussion and understanding of climate change as an emerging risk?
- How does management gain and maintain an appropriate level of understanding of climate-related risks and opportunities that are likely to have a material impact on the organisation?
- Is there clarity of roles, responsibilities and accountabilities for each component of the 'three lines of defence' as part of the overall risk management of climate change?[1]
- How does the board gain assurance over the management of climate-related risk in the organisation? For example:
  - assessing the organisation's approach to managing climate-related risks;
  - reviewing board briefings on relevant climate change matters, including results of climate risk deep-dives; and
  - assessing management's use of data and consideration of data integrity to gain assurance over any potential impact.

Note

1 See the *Orange Book*, Annex 2.

Integration

Risk management shall be an integral part of all organisational activities to support decision-making in achieving objectives.

- How does management build awareness and understanding of emerging risks such as climate change across the organisation?
- What processes does the organisation have in place to embed climate-related risks throughout the organisation?
- Do the organisation's strategic objectives, budgets and delivery plans reflect management's consideration of climate change risks and opportunities?
- How is climate risk embedded in climate-related policy development (where applicable)?
- How does management ensure that climate change considerations are clearly factored into its risk appetite?
  - Is the organisation's risk attitude and appetite over climate change-related matters understood by the wider workforce, particularly key decision-makers?
  - Is management able to explain the impact of climate change risk on decision-making across the organisation?

Collaboration and best information

Risk management shall be collaborative and informed by the best available information and expertise.

- How does management keep up to date with climate change-related developments, policy and regulatory changes?
- How confident is management in its understanding of its organisation's responsibilities in delivering wider departmental or government policy objectives, such as achieving net zero by 2050, and the Greening Government Commitments?
- How does management identify external risks which have the potential to impact it from beyond the organisation, for example in its supply chain or – in the case of departments – within arm's-length bodies?
- Has management considered data sharing arrangements with other government bodies to support a joined up and collaborative approach to climate risk management?
- How does management get an awareness of what matters to its stakeholders on climate change risk?
  - What is management doing to respond to those expectations?

Challenge questions *continued*

Risk identification and assessment

Risk management processes shall be structured to include risk identification and assessment to determine and prioritise how the risks should be managed.

Risk identification:

- What is management's process for identifying climate-related risks?
  - Does this process extend across the whole organisation, so all potential climate-related risks can be identified?
  - For departments, does this include risks within arm's-length bodies?
- Can management articulate what climate-related risks are most significant to the organisation and why?
- If the organisation considers climate change as an emerging risk, how confident are we that management has a clear understanding of the indicators which would cause it to escalate to a principal risk?
- What timeframe (short-, medium-, and long-term) does management use in its identification and assessment process?

Risk assessment:

- How are climate change risks measured?
  - Has management considered a range of methods to analyse the impact of climate-related risks?
  - Are we confident that that the methods used to measure the risks are appropriate for climate-related issues?
  - Are we confident that management has good-quality data to be able to calculate the impact of climate-related risks to the organisation?
- How confident are we that management understands and considers the inherent uncertainty associated with risks arising from climate change?
  - Does management conduct horizon-scanning and scenario analysis to consider the range of outcomes?
  - Has management conducted deep-dive reviews (where required) and assessed the results to help it understand the impact and severity of climate-related risks on the organisation, and how they should be prioritised?
- How is the organisation's risk appetite or tolerance levels considered when evaluating climate-related risks?
- Can management demonstrate that it has conducted a robust assessment of all climate change risks?

Risk treatment

Risk management processes shall be structured to include the selection, design and implementation of risk treatment options that support achievement of intended outcomes and manage risks to an acceptable level.

- How confident are we that management can demonstrate a clear rationale for the treatment activities and response to climate change risks, including the benefits it expects to gain?
- Has enough consideration been given to the uncertainties that exist in this area?
  - How flexible is management's current risk response strategy in dealing with the unpredictability of climate change risks?
- Are climate-related risk responses aligned with the organisation's risk appetite?
  - Is there any indication that management needs to reassess its risk appetite to respond appropriately to climate change risk, particularly given the unpredictable nature of the risks?
- With extreme climate events likely to worsen over time and potentially at an accelerated pace, has management considered how responding to these will impact on other areas of the organisation, and the management of other principal risks?
- Has management developed a climate change adaptation strategy for the organisation, and have climate change risk treatment and response plans been integrated as part of this?
- Climate change targets by their nature can be long-term. Is management clear on what represents good progress against its climate change targets?

Challenge questions *continued*

Risk monitoring

Risk management processes shall be structured to include the design and operation of integrated, insightful and informative risk monitoring.

- Does management understand how its overall risk profile is likely to change as a result of climate change risk?
- Has management defined core performance metrics, and key risk and control indicators for climate-related risks, and have risk appetite and tolerance been factored in?
  - How do those metrics influence strategic decision-making, investment plans and budget considerations?
- How are the results of climate change risk monitoring shared with the rest of the organisation?
  - Is there a feedback loop between the results of monitoring, the assessment of the residual risk, the effectiveness of the risk management activities, and the decision-making?
- How often does management re-assess the impacts of existing climate-related risks? For example, if the organisation is impacted by legislative changes or new government targets, does management track these changes?
- How do departments monitor risks within their arm's-length-bodies and ensure that climate change risks are escalated and aggregated effectively?

Risk reporting

Risk management processes shall be structured to include timely, accurate and useful risk reporting to enhance the quality of decision-making and to support management and oversight bodies in meeting their responsibilities.

Internal reporting

- Is climate change risk reporting similar in style to other principal risks, so that we can assess how progress is being made with objectives?
- How regularly are climate change risks reported? Is this frequent enough to inform robust decision-making?
- Does management conduct deep-dive reviews of climate-related risks, and present the review findings to the board and ARAC?
- How have climate-related risks and assumptions been factored into financial information such as budgets and forecasts in the short-, medium- and long-term?
- How satisfied are we with the quality of information reported?

External reporting

- Is climate change clearly embedded within the organisation's strategy and strategic objectives? Can readers see a clear link between the strategy, objectives and key performance indicators?
- Is there clear articulation of how climate change risks are identified, monitored and managed across the organisation?
- Is the information in the financial statements consistent with commitments that are disclosed in the annual report?
- Where climate change risks give rise to a material financial impact, is this appropriately and accurately reflected in the financial statements?
- Has management clearly explained material assumptions and uncertainties relating to estimates affected by climate change? For example, does it include relevant sensitivity analysis so users can appreciate the scale of impact?

Continual improvement

Risk management shall be continually improved through learning and experience.

- How regularly is climate change risk re-assessed? Is this frequent enough?
- How does management build experience and learning into the climate change risk assessment process?
- Is climate change risk incorporated within the organisation's overall approach to continually improving its risk management processes?
- Are there any lessons to be learned from government's response to other cross-cutting challenges, such as COVID-19 and EU Exit?
- Is there a plan to assess the maturity of management's approach to climate change risk management?