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Transition Risk Analysis Support Toolkit – Element 2

Financial sector good practice TCFD-aligned disclosure examples

DNA Economics and The Green House

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1. Introduction

The global climate challenge is placing increased pressure on all sectors of the economy to be transparent about their contribution to greenhouse gas emissions, their risks associated with climate change, and actions being taken to reduce emissions and adapt to the inevitable impacts of climate change. The financial sector is no exception. The Taskforce on Climate-related Financial Disclosure (TCFD) was created in 2015 by the Financial Stability Board (FSB) to develop a set of recommendations for consistent disclosure for the sector. The TCFD recommendations[1] are fast being adopted as the global standard for disclosure, and reporting against the TCFD is or will become mandatory in parts of the world.

The TCFD recommendations are structured along four pillars, as shown in Figure 1. Also shown in the Figure are the recommended disclosures under each pillar.

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities.
Recommended Disclosures	**Recommended Disclosures**	**Recommended Disclosures**	**Recommended Disclosures**
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the potential impact of different scenarios, including a 2° c scenario, on the organization's businesses, strategy, and financial planning.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Figure 1: The pillars of the TCFD recommendations and the recommended disclosures for each pillar

Source: TCFD (2017)

The TCFD recommendations are not, however, prescriptive in the specific content which needs to be disclosed, nor in the form which disclosures must take. Organisations reporting against TCFD are provided with the option to limit the scope of reporting in their first year, and progressively increase the level of detail included in their disclosures.

[1] https://www.fsb-tcfd.org/recommendations/

This document has been prepared to support stakeholders in the financial sector who are seeking to begin or improve their climate disclosures by providing examples of good practice disclosure from around the world and within South Africa. The document is structured along the four pillars shown in Figure 1.

The document has been prepared as part of a Toolkit to support the asset management and pension fund industries to improve their climate-related financial disclosures and incorporate climate considerations into investment decisions. For an overview of the toolkit and a description of its other components please see *Introduction to the Transition Risk Analysis Support Toolkit* available from here. The Toolkit has been developed under a broader South Africa UK Partnering for Accelerated Climate Transitions (South Africa-UK PACT)[2] funded project on Climate Related Financial Disclosures. Further outputs from this project, including other elements of the Toolkit, are available online[3].

2. Governance

The first pillar of the TCFD recommendations is linked to corporate governance around climate change.

"Investors, lenders, insurance underwriters, and other users of climate-related financial disclosures (collectively referred to as "investors and other stakeholders") are interested in understanding the role an organization's board plays in overseeing climate-related issues as well as management's role in assessing and managing those issues. Such information supports evaluations of whether climate-related issues receive appropriate board and management attention" (TCFD, 2017).

Two disclosures are thus recommended identified under the Governance pillar.

Board oversight of climate-related risks and opportunities

Given the nature of climate change and its impacts, the TCFD recommendations recognise that climate-related issues should receive appropriate board-level attention. Key questions that can be asked to guide disclosures surrounding the board oversight role are shown in Box 1.

[2] UK Partnering for Accelerated Climate Transitions. For more information see https://www.ukpact.co.uk/country-programme/south-africa

[3] http://www.dnaeconomics.com/pages/sa_climate_disclosure/

Box 1: Governance questions

- What are the processes and frequency by which the board are informed about climate-related issues?
- Which of the following board committees are informed about climate-related issues: audit, risk, or other committees?
- How does the board, including its committees, consider climate-related issues when reviewing and guiding strategy and management plans of action, and in considering risk management policies?
- How does the board, including its committees, consider climate-related issues when: considering annual budgets and business plans; overseeing major capital expenditures, acquisitions, and divestitures; and setting organizational performance objectives?

Source: (CDSB and SASB, 2019)

Example 1 shows how the board and board committees oversee climate-related issues at BlackRock. The disclosure highlights the responsibilities of the committees with respect to sustainability, as well as the number of times sustainability-related topics were discussed at meetings during the reporting period.

Example 1: Governance - BlackRock oversight of sustainability issues

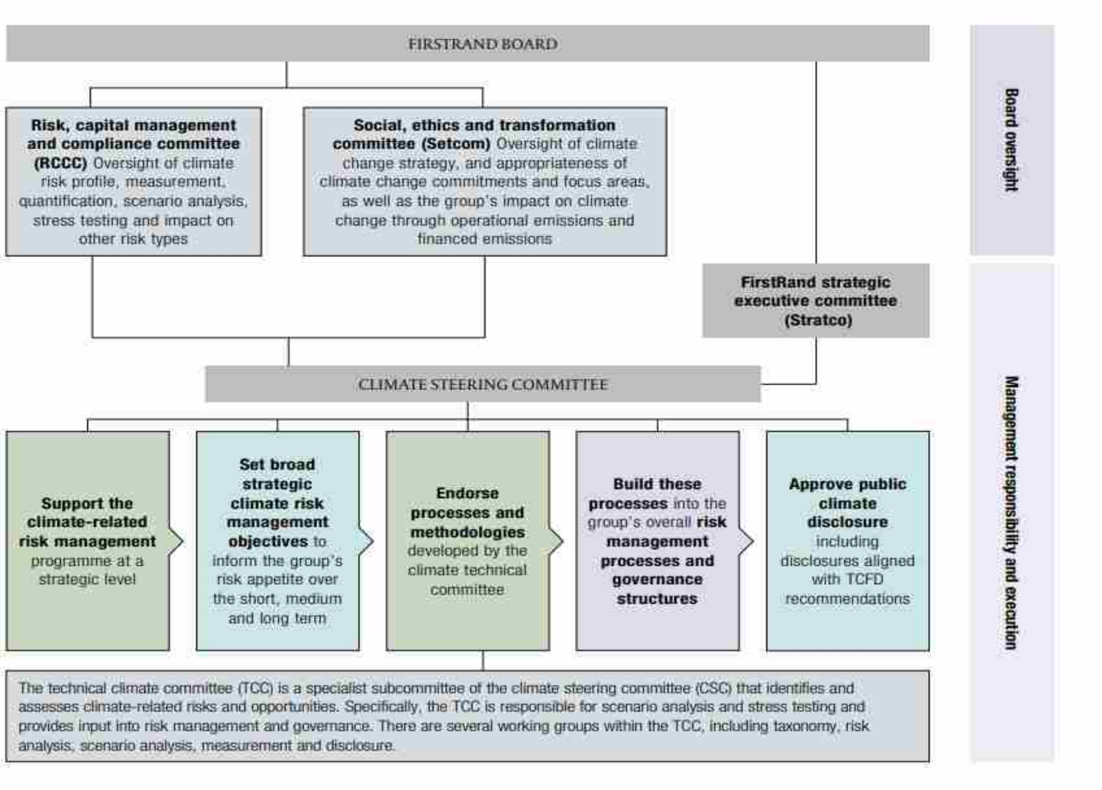
Governing Body	Sustainability-Related Responsibilities	2020 Sustainability-Related Discussions [a]
Board of Directors	Engages with senior leaders on near- and long-term business strategy and reviews management's performance in delivering on our framework for long-term value creation, including as it relates to sustainability.	3 meetings
Risk Committee	Reviews and discusses with management levels of risk, risk assessment, risk management and related policies including those related to ESG risks.	3 meetings
Nominating & Governance Committee	Periodically reviews corporate and investment stewardship-related policies, programs, and significant publications relating to environmental (including climate change), social, and other sustainability matters.	4 meetings

a) Out of 6 total meetings; reflects meetings where sustainability-related matters were presented and discussed. Sustainability-related matters, for the purposes of this TCFD report, include: the integration of ESG factors into investment processes, sustainable investment strategies, investment stewardship engagement on climate-related matters and corporate sustainability strategy and disclosures.

Source: (BlackRock 2020)

FirstRand outlines board-level committees that are responsible for overseeing climate-related issues, each of which have clearly defined roles, in its governance disclosure (Example 2). The Risk, Capital management and Compliance committee focus on how climate change impacts the company's risk profile, while the Social, Ethics and Transformation committee ensure that the impact of FirstRand's operational and finance activities on the climate are appropriately considered and supported by clear policies. These committees provide climate-related feedback to the board at least quarterly.

Example 2: Governance structure at FirstRand



Source: (FirstRand, 2021)

The role of management in assessing and managing climate-related issues

In addition to board oversight, the Governance pillar considers management's role in assessing climate-related risks and opportunities. Key questions to be considered to guide disclosures in this regard are shown in Box 2.

Box 2: Management questions

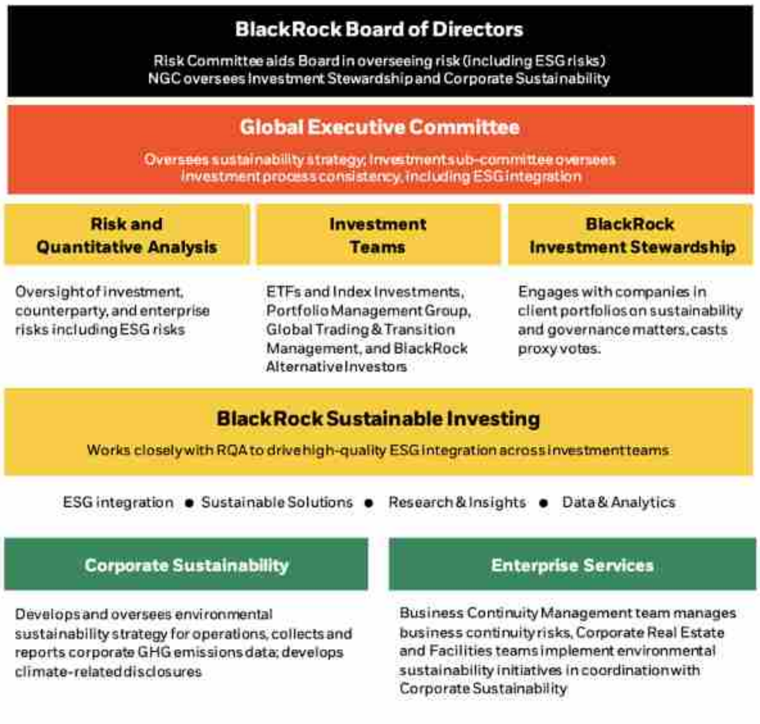
- How is management informed of climate-related issues and how does it monitor these issues?
- To which management-level positions or committees has the organization assigned climate-related responsibilities? Do they specifically include assessing and managing climate-related risks?
- For each management-level position or committee identified with climate-related responsibilities, does this position report to the board or a committee of the board?
- What are the associated organizational structures, including management level positions and committees, for governance and management of climate-related risks and opportunities and how do they relate to one another?
- What are the processes by which management is informed about climate-related issues?
- How does management monitor climate-related issues? What specific committees or positions have responsibility for this monitoring?

Source: (CDSB and SASB, 2019)

As shown in Example 2, FirstRand's groups chief risk officer (CRO) is responsible for driving the group's overall climate change approach, and reports periodically to the groups strategic executive committee, the group's most senior executive forum chaired by the group CEO. The coordination of climate-related risks and opportunities is supported by the Climate Steering Committee which is chaired by the CRO and comprises senior representation from across the group. FirstRand also describes how the management of climate-related risks and opportunities are factored into remuneration at the management level.

BlackRock and Investec provide details on overall management responsibility for assessing climate-related risks (Example 3).

Example 3: Management roles at BlackRock (left) and Investec (right)



Management role

Climate considerations are integrated into a multidisciplinary, company-wide management processes throughout the group. We see management as active participants in the mitigation and management of climate-related risks and opportunities.

Chief Executive responsibility

For climate-related risks and opportunities, the Chief Executive, Fani Titi, takes ultimate executive responsibility for all ESG issues. He is also a member of the UN GISD, an alliance with representation from 30 leading corporates and financial institutions across the world.

Group ESG Executive Committee

The Chief Executive is supported by the group ESG Executive Committee to coordinate ESG efforts across geographies and businesses from both a strategy and policy perspective.

Executive responsibility

The board assigned executive responsibility to Marc Kahn (Global Head of People & Organisation) for driving the sustainability agenda across the group. Mark Currie, our group chief risk officer as well as Kevin McKenna, our UK chief risk officer are members of the Group ESG Executive Committee with Kevin McKenna being appointed as the Senior Management Function (SMF) for climate risk.

Global Head of Sustainability

The Global Head of Sustainability, Tanya Dos Santos, is a member of the group ESG Executive Committee and collaborates with a range of senior leaders on ESG issues. The group sustainability team reports to the Global Head of Sustainability and is tasked with supporting the risk teams in identifying environmental and climate-related risks that may have an impact on the group. They are also responsible for defining sectoral policies aimed at limiting the ESG risks to which Investec may be exposed to.

Source: (BlackRock, 2020; Investec, 2020)

In their disclosure, Neuberger Berman distinguishes between the roles of senior management and portfolio managers and investment teams (Example 4).

Example 4: Management roles at Neuberger Berman

2. Senior Management

Senior management is responsible for overseeing the firm's operations, risk department and investment professionals, with climate-related risks and opportunities as a subset of overall management of the enterprise. The CEO is ultimately responsible for updating the Board on material updates and relevant climate-related risks and opportunities, and is supported in this by the Head of ESG Investing, Chief Risk Officer, Chief Investment Officers and Chief Operating Officer.

The Head of ESG Investing works with the CIOs and the CRO to ensure appropriate climate expertise and analytical capabilities are in place to support portfolio managers and research analysts in understanding the potential implications of climate change for security analysis and portfolio construction.

The COO and CRO play an especially active role in managing the firm's business operations and resiliency to climate-related risks. This includes improvements to the firm's operational efficiencies and carbon footprint or adaptation and mitigation actions with respect to both transition and physical risk.

3. Portfolio Managers and Investment Teams

We believe ESG analysis should be based on materiality and customized by asset class and investment style by systematically modeling climate-related risk and opportunity. This approach enables each portfolio manager to integrate climate-related risk analysis into her/his respective investment process in a manner they deem appropriate for investment decision-making. We believe that climate change is a risk and opportunity for all strategies, but the degree and mechanism by which it may be material will vary among asset classes, individual strategies and investment time horizons. Therefore, depending on the holding period, the short-, medium- and long-term risks will be considered accordingly.

Source: (Neuberger Berman, 2020)

3. Strategy

"Investors and other stakeholders need to understand how climate-related issues may affect an organization's businesses, strategy, and financial planning over the short, medium, and long term. Such information is used to inform expectations about the future performance of an organization" (TCFD, 2017).

Three disclosures are highlighted under the Strategy pillar.

Identification of climate-related risks and opportunities

Box 3 identifies the questions that can be used to guide disclosure on climate related risks and opportunities that have been identified by the organisation, over the short, medium and long term.

Box 3: Questions related to identification of short, medium and long term climate risks and opportunities

- What does the company consider as relevant short-, medium-, and long-term time horizons, taking into consideration the useful life of its assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms?
- What are the specific climate-related issues for each time horizon (short-, medium-, and long-term) that could have a material financial impact on the organization?
- What process(es) are used to determine which risks and opportunities could have a material financial impact on the company?
- What are the company's risks and opportunities disaggregated by sector and/or geography?

Source: (CDSB and SASB, 2019)

HSBC has considered how climate change is impacting its corporate customers, and provides such information on its customer base in the automotive, building and construction, chemicals, metals and mining, oil and gas, and power and utilities sectors. Example 5 shows how this is presented for the automotive sector.

Example 5: HSBC's identification of climate risks and opportunities in the automotive sector

How climate change is impacting our corporate customers

Supporting our customers to thrive through transition is a key part of our strategy. Here we set out the key sectoral drivers impacting each of our high transition risk sectors and include some examples of how we continue to support our corporate customers on this journey.

Automotive

Automotive carbon emissions are mainly a combination of tail-pipe and vehicle manufacturing emissions. Cars currently contribute over 7% of global emissions, over half of the emissions from transport as a whole, according to the Energy Transition Commission. Achieving net zero emissions within this sector depends on transitioning away from combustion engines to electric vehicles and alternative fuel sources, as well as recycling of construction materials or use of low-carbon materials. A shift in vehicle use towards car sharing or self-drive vehicles, and a reduction in the number of vehicles, could also play an important role.

The most immediate impact on our customers in the automotive sector is their response to the policy and regulatory changes targeting cleaner fuel standards and technological advancement in battery design, and decarbonising energy use and material production.

How we are supporting customers

- In September 2020, HSBC acted as joint bookrunner and lead manager on a €2bn dual-tranche green bond for car maker Volkswagen, which will use the proceeds to finance the manufacturing of electric vehicles and dedicated e-charging stations (as per Volkswagen's Green Bond Framework).
- In October 2020, we played a key role on a €2.5bn sustainability-linked revolving credit facility for Michelin, the French tyre maker. Repayment terms are linked to Michelin meeting targets on the group's employee engagement, greenhouse gas emissions reduction and environmental impact of its sites.

Source: (HSBC, 2020)

Investec (2020) manages risks by defining them as high, medium and low risks exposures (see Example 6).

Example 6: Investec's framework for identifying climate-related risks.

Investec is promoting sustainability as part of its core strategy and believes there needs to be a balance between economic and financial imperatives, the needs of society and their combined impact on the environment. Our commitment to sustainability recognises the interconnected nature of our business, the economy, the environment and society. Within our operations we support efforts to limit global warming to less than two degrees above pre-industrial levels; and to transition to a low carbon economy. We have achieved net-zero carbon emissions in our global operations and committed to ongoing carbon neutrality for our operational footprint.

We define high medium and low risk exposures according to the International Finance Corporation (IFC) definitions.

High risk	Medium risk	Low risk
Proposed funding or investment is likely to have significant adverse social or environmental impacts that are diverse, irreversible or unprecedented.	Proposed funding or investment likely to have potential limited adverse social or environmental impacts that are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures.	Proposed funding or investment is likely to have minimal or no social or environmental impacts. Primarily services, consulting, training and education, trading, retail sales, etc.

Source: (Investec, 2020)

The Commonwealth Bank of Australia provides a good example of how to present climate-related opportunities in its 2018 Annual report.

Example 7: Commonwealth Bank of Australia highlighting climate-related opportunities

Low carbon transition opportunities

There are significant opportunities presented by the transition to a low carbon economy.

Sustainable finance
This financial year our lending exposure to the renewable energy sector grew to $3.7 billion, reflecting our expertise in this market. For the year ended June 2018, Commonwealth Bank ranked number one for Mandated Lead Arranger financing roles of renewables projects in Australia and ranked 18th globally.[1]

We have also set up a Sustainable Finance Committee to focus on identifying other low carbon opportunities, such as climate bonds. This year we led more than $2 billion of green or sustainability notes.

We continue to support business investment in energy efficiency improvements through our $300 million partnership with the Clean Energy Finance Corporation on the Energy Efficient Equipment Finance program.

In the 2017 financial year we set ourselves a Low Carbon Target of $15 billion by 2025[2]. Our progress to date shows our exposure to low carbon projects as at 30 June 2018 is $7.3 billion. Eligible projects include renewable energy, 6-star rated commercial green buildings, energy efficiency and low carbon transport. We have aligned our Low Carbon Target eligible projects with the green project categories identified in the Green Loan principles[3].

Global environmental markets
We are aiming to be a market leader in environmental markets, supporting our clients' transition to a net zero emissions economy. We target clients globally who have a strategy in place to support their transition. We support this transition by providing tailored financing and risk management environmental market solutions to meet client requirements. This includes facilitating liquidity across global environmental markets.

Products and services
Across retail and business lending, investment and insurance, we will continue to explore and develop product and service options which meet emerging customer needs, to help them reduce their exposure and/or build resilience to climate change.

This year we added a new Alliance Partner – Affirmative Investment Management – and the Affirmative Global Bond Fund (the Fund) to the FirstChoice platform. The Fund invests in global green bonds and utilises ESG criteria and environmental impact screens; it is the first of its kind available to retail investors in Australia.

(1) IJ Global, Renewables League tables. 2018 financial year, by transaction value.
(2) Our target is on the basis of total committed exposures as at 30 June 2025, and is not a cumulative financing target.
(3) The Green Loan Principles were launched in March 2018 by the Loan Market Association, in conjunction with the Asia Pacific Loan Market Association, and supported by the International Capital Market Association. It is a high level framework for the wholesale green loan market. Indicative categories of eligibility for Green Projects are included in Appendix 1 of the Green Loan Principles. They are based on the categories provided in the Green Bond Principles 2017.

Source: (CBA, 2018)

Impact of climate-related risks and opportunities on strategy and financial planning

Once the risks and opportunities have been identified, the disclosures explore the potential impact of these on strategy and financial planning. Key questions in this regard are presented in Box 4.

Box 4: Questions linked to impacts of short, medium and long term climate risks and opportunities

- What is the impact of climate-related risks and opportunities on the company's businesses and strategy (e.g., on its products and/or services, supply and value chains, adaptation and mitigation activities, R&D investment, and operations)?
- How do identified climate-related risks and opportunities affect and serve as an input to the company's financial planning process? What is the time period(s) used, and how does the organization prioritize these risks and opportunities?
- Has the organization used climate-related scenarios to inform its strategy and financial planning?
- What is the impact of climate-related risks and opportunities on the organization's financial planning in terms of operating costs and revenues; capital expenditures and capital allocation; acquisitions/ divestments; and access to capital?
- How do the disclosures on the impact of climate-related risks and opportunities on the company's businesses, strategies and financial planning reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time?

Source: (CDSB and SASB, 2019)

Schroders asset managers outlines the risks and opportunities of climate change that could have a material financial impact on the organisation in the short, medium and long term, along with the impacts of these risks and opportunities. These are monitored on an ongoing basis by the relevant business areas across the organisation (Example 8).

Example 8: Risks and opportunities and their potential implications for Schroders

Strategy

The decarbonisation of the global economy as we transition towards net zero poses a number of risks and opportunities to our business and those that we invest in. We consider these over the following time horizons:

0-5 years: Short term | 5-10 years: Medium term | 10 years +: Long term

Risk	Description	Timeframe	Impact
Market	Changing client behaviour impacting demand for our products	Medium term	Decreased revenue
Physical	The impact on physical operations of extreme weather events or changes in temperature	Long term	Increased capital expenditure
Regulatory and legal	Changes to current/emerging climate-related regulation that impact how companies operate	Long term	Decreased profitability
Reputation	Perception of not having responded appropriately to climate challenges	Medium term	Decreased revenue
Technology	The need to keep up with technological advancements to examine and manage climate risks and opportunities	Medium term	Impact on fund performance and revenue
Opportunity	**Description**	**Timeframe**	**Impact**
Products and services	Evolution of product range in response to opportunities	Medium term	Increased revenue
Market	Adapting investment proposition to reflect client preferences	Medium term	Better competitive position and increased revenue
Resilience	Providing products to manage the impacts of climate change	Short term	Increased revenues
Energy source	Use of new technology and lower emission sources to reduce our environmental impact	Medium term	Reduced indirect costs

Source: (Schroders, 2020)

Schroders uses propriety tools to assess and measure these climate-related risks and opportunities in client portfolios, which provides a forward-looking measure of the impact of businesses.

> We have used our proprietary tools to assess investment risks and opportunities on our own business. Our model implies that there would not be a material impact on our profitability as a result of carbon prices rising to USD 100/t, or as a consequence of other physical risks. This reflects the progress we have made to incorporate ESG factors into our investment decisions processes, and the limited exposure of our operational activities.

Source: (Schroders, 2020)

Impact of future scenarios on businesses, strategy and financial planning

Finally, the Strategy pillar considers the resilience of the organization's businesses, strategy and financial planning under different future climate-related scenarios. The TCFD requires that at least one of the scenarios to be considered is that in which a 2˚C or lower temperature target is met (Box 5).

Box 5: Questions relating to future scenarios

- What are the climate-related scenarios and associated time horizon(s) considered by the organization?
- What critical input parameters, assumptions, and analytical choices underlie these climate-related scenarios (e.g., policy assumptions, energy deployment pathways, technology pathways, and timing)?
- How resilient are the company's strategies to climate-related risks and opportunities, taking into consideration a) transition to a lower-carbon economy consistent with a 2°C or lower scenario, and b) where relevant to the company, scenarios consistent with increased physical climate-related risks?

Source: (CDSB and SASB, 2019)

Investec (2020) explores the resilience of its organisational strategy to different climate pathways, albeit at a high-level. The company notes that they have signed up to the Partnership for Carbon Accounting Financials to evaluate their balance sheet at an asset class level to better understand their resilience to different climate pathways.

Example 9: Investec's disclosure on impacts of future scenarios

Resilience of our climate risk strategy to a limit of 2°C or lower increase in global temperature scenario

Investec is promoting sustainability as part of its core strategy and believes there needs to be a balance between economic and financial imperatives, the needs of society and their combined impact on the environment. Our commitment to sustainability recognises the interconnected nature of our business, the economy, the environment and society. Within our operations we support efforts to limit global warming to less than 2°C above pre-industrial levels; and to transition to a low carbon economy. We have achieved net-zero carbon emissions in our global operations and committed to ongoing carbon neutrality for our operational footprint.

Within our UK operations, we have evaluated the 2021 Biennial Exploratory scenario and climate risk discussion paper released by the Bank of England. The objective of this discussion paper is to test the resilience of the largest banks, insurers and the financial system and to provide three distinct scenarios:

- Early policy action scenario where the transition to a carbon-neutral economy starts early and the increase in global temperature stays below 2°C, in line with the Paris Agreement
- Late policy action scenario where the global climate goal is met but the transition is delayed and must be more severe to compensate for the late start
- No additional policy action scenario where no policy action beyond that which has already been announced is delivered. Therefore, the transition is insufficient for the world to meet its climate goal.

On the 7th May the Prudential Regulation Authority (PRA) announced further details of its plans to support organisations in their response to COVID-19 and re-prioritised their areas of focus. This resulted in the postponement of the launch of the 2021 Biennial Exploratory scenario and climate risk exercise until mid-2021. We will however continue to skill up resources and participate in industry initiatives to evaluate our resilience to climate risk.

In South Africa, the National Treasury released their report on "Financing a sustainable economy". We are working with various organisations in the financial services industry, including participation from government, to implement the recommendations and to construct a taxonomy to enable consistent scenario pathways and reporting.

We have also signed up to the Partnership for Carbon Accounting Financials (PCAF) and will be evaluating our balance sheet on an asset class basis to understand our climate resilience to various climate risk scenario's. We have committed to work with our clients to fully understand the climate sensitivity of their business and to support them in implementing carbon reduction strategies.

Our resilience

Based on the considerations above, we find that the resilience of Robeco's value creation model is not fundamentally affected by climate change. Our role as an asset manager, the value we provide to our clients, and our core revenue mechanism are not expected to change in the face of climate-related transition risks. We believe that the low-carbon transition will trigger not only risks but also wide investment opportunities, and we believe that the uncertain and dispersed nature of the effects of climate change makes a case for active management.

However, increasing climate-related investment risks will force asset managers more and more to include ESG considerations into their investment strategies. In that sense, ESG integration is likely to become more mainstream. Differentiating ourselves as a sustainable asset manager may therefore become more challenging over time. More transparency around ESG standards, such as the EU Taxonomy, may also expand opportunities for passively managed funds, which could increase downward pressure on fees for actively managed ESG funds.

We are convinced that we are in a good position to deal with these trends thanks to:

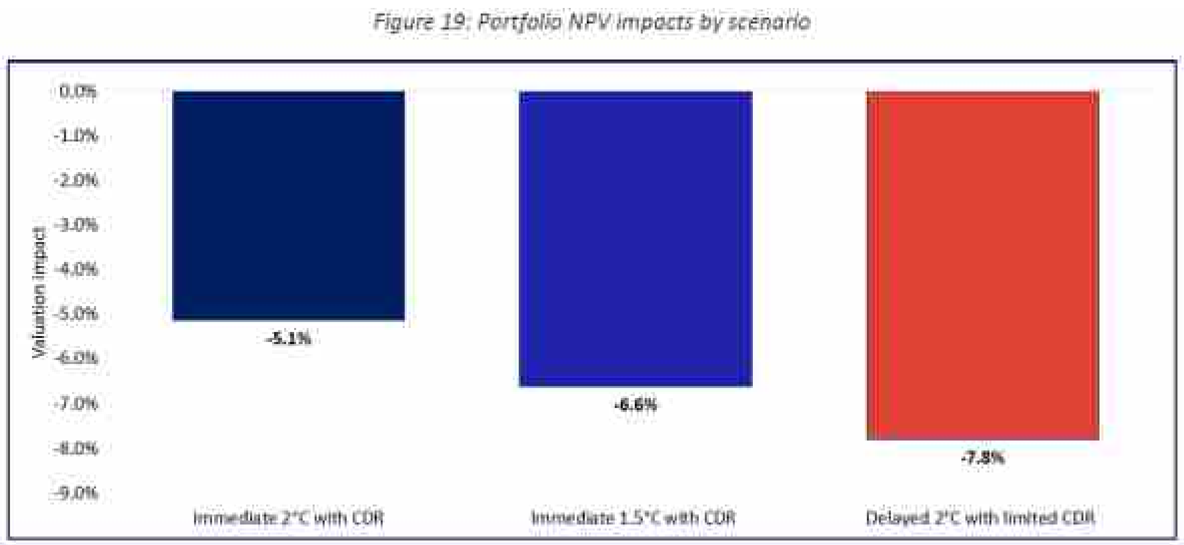
1. Our long history as a sustainability pioneer. We have proven our leadership on ESG issues generally, and we also lead in climate research through our in-house ESG research and active ownership teams.
2. Our track record in research and innovation. Close collaboration between ESG research and investment teams allows us to offer valuable climate solutions for our clients.

Source: (Investec, 2020)

Robeco (2020) considers its resilience to different climate pathways, and suggests that its business is not fundamentally affected by climate change, due to the presence of climate-related opportunities and the integration of ESG considerations into investment strategies. Schroders (2020) has also disclosed how it has used scenario analysis to assess the organisation's resilience to different climate pathways. While details of these assessments are not disclosed, Schroders also suggests that their business is resilient to climate change. For example, increases in carbon prices and physical risks will not have a material impact on profitability.

In Example 10 Vivid Economics shows the impact of transition risk under three different climate scenarios on the value of a portfolio of 55 of the largest equities on the JSE by 2050 in net present value terms as part of best-practice scenario disclosure example produced for this South Africa-UK PACT-funded project.

Example 10: Vivid Economics shows the impact of transition risk on a portfolio of South African equities



Source: (Vivid Economics, 2021)

4. Risk Management

The third pillar of the TCFD relates to management of climate-related risks.

"Investors and other stakeholders need to understand how an organization's climate-related risks are identified, assessed, and managed and whether those processes are integrated into existing risk management processes. Such information supports users of climate-related financial disclosures in evaluating the organization's overall risk profile and risk management activities" (TCFD, 2017).

Three recommended disclosures are identified under this pillar.

Processes for identifying and assessing climate-related risks

Questions to guide disclosures on identification and assessment of climate-related risks are presented in Box 6.

Box 6: Questions for identifying and assessing climate-related risks

- What processes does the organization use to identify and assess climate-related risks?
- Does the organisation consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) or other relevant factors?
- What is the organization's process for assessing the potential size and scope of identified climate-related risks?
- How does the organization determine the relative significance of climate-related risks in relation to other risks?
- What risk classification framework(s) and definitions of risk terminology does the organization use?

Source: (CDSB and SASB, 2019)

Example 11 presents Ninety One's approach to identification of climate-related risks. Climate risks as included as part of the company's broader ESG risk assessment and are included in its investment-risk governance framework. Risks are identified through a combination of research using resources and tools at their disposal, and stakeholder engagement.

Example 11: Ninety One's approach to identification of risks

Climate-related risks are an increasingly important part of the investment risks we seek to understand and manage on our clients' behalf. Climate risks can manifest in either physical risk, whereby increased global temperatures, rising sea levels and the growing prevalence of extreme weather events such as droughts, floods and wildfires impacts businesses and financial assets, or transition risks, whereby changes in legislation, regulation or consumer behaviour impact costs or the demand for goods and services.

Ninety One's investment teams have access to resources and tools to help them identify, measure and address climate risk as part of their research process, including a proprietary climate-risk tool which provides data on carbon emissions. This analysis is aimed at enabling us to identify holdings at the greatest risk of negative impacts from climate change. The investment teams will also seek to identify candidates for strategic engagements with the aim of supporting our investments in their efforts to manage climate-related risks.

Additionally, climate risks are considered as part of the broader ESG risk assessment developed by Ninety One's Investment Risk team. Reporting on ESG risks, including climate risks, is included in the investment-risk governance framework and coordinated via Ninety One's Investment Risk Committee, which in turn reports to Ninety One's Management Risk Committee.

Source: (Ninety One, 2021)

Investec's approach to identifying, assessing and managing risks is presented in Example 12.

Example 12: Investec's risk approach

Risk management

Investec supports international best practice regarding the responsibility of the financial sector in financing and investing transactions. Social, environmental and ethical risk considerations are implicit in our values, culture and code of conduct, and are applied as part of our ESG risk framework.

Identifying, assessing and managing climate-related risks

The group supports the precautionary approach to ESG and strives to minimise and prevent investing in projects or dealing with counterparties where potential and unmitigated environmental degradation might occur. We recognise that identifying and quantifying environmental risk should be part of the normal process of risk assessment and management within businesses.

We engage with our clients on sustainability issues in order to minimise the risks and require clients to meet appropriate technical, governance, transparency, social and environmental standards.

For example:

- as part of our client onboarding process, we assess potential clients for various risk profiles, including responsible business behavior and their activities
- ESG risks are identified and assessed as part of transaction due diligence processes
- our operational activities are assessed for compliance with relevant environmental, health and safety, and labour rights regulations
- we regularly review sensitive sectors and activities prone to bearing environmental and social risks.

We follow the guidelines supplied by the International Finance Corporation (IFC) to categorise our general financing and lending activities into high, medium and low risk. We consider existing regulatory requirements related to climate change and remain focused on adhering to the highest levels of compliance to professional standards and integrity in each of our jurisdictions. Our culture is a major component of our compliance framework and is supported by robust policies, processes and talented professionals who ensure that the interests of our clients and shareholders remain at the forefront of everything we do. We have independent compliance functions in each of our core operating jurisdictions, which ensure that the group implements the required processes, practices and policies to uphold applicable regulations and legislation.

We are guided by our climate change statement and environmental and social risk policies. The board has the ultimate responsibility to ensure that the group is operating as a responsible corporate. The board, through its various subcommittees, has performed a robust assessment to identify principal and emerging risks. Regular reporting of these risks is made to senior management, the executives and the board at the DLC Board Risk and Capital Committee. Extreme events are assessed and mitigation actions are considered within Investec's risk appetite frameworks.

We support international best practices regarding the responsibilities of the financial sector in financing and investing transactions. ESG considerations are implicit in our values, culture and code of conduct and are applied as part of our ESG risk frameworks. In particular, the following factors are considered when a transaction is evaluated and approved or declined based on sustainability considerations:

- Environmental considerations (including animal welfare and climate-related impacts)
- Social considerations
- Ethical considerations (including human rights)
- Macro-economic considerations (including poverty, growth and unemployment).

Risk management and key mitigating actions

Investec has a holistic approach to sustainability, which goes beyond recognising our own environmental footprint. It includes our many community activities and is based on a broader responsibility to our environment and society. Accordingly, sustainability risk implications are considered by the relevant credit or investment committee when making lending or investment decisions.

Risk appetite and tolerance metric

We take a cautious approach to industries known to damage the environment. Financial risk arising from climate change is extremely important and helps to inform our decisions. We acknowledge that our approach is work-in-progress and will continue to enhance it over time. Our environmental policy and climate risk statement is approved by the board annually.

For our environmental policy and climate change statement, click here.

Our board-approved risk appetite framework provides a basis for us to monitor significant exposures to certain industries, where necessary. As at 31 March 2021 we have maintained our risk tolerance level.

Source: (Investec, 2020)

Process for managing climate-related risks

Disclosures then turn to understanding processes for managing the climate-related risks that have been identified (Box 7).

Box 7: Questions for managing climate-related risks

- How does the organization prioritize climate-related risks? How does the organization determine what climate-related information is material?
- Does the organisation address all relevant categories of climate-related risks (i.e. transition risks, including policy and legal, technology, market, and reputation, as well as physical risks, including acute and chronic risks)?

Source: (CDSB and SASB, 2019)

In their TCFD disclosure, Investec explores both the physical and transition risks and opportunities linked to climate change, in the short, medium and long term. Both acute and chronic physical risks are discussed.

Example 13: Investec's physical and transition risk management

Acute physical risks

The risks of rapidly changing weather events such as cyclones, hurricanes, fires, storms, landslides and floods may have financial implications for our operations and business, such as direct damage to assets, increasing default rates and credit losses due to these extreme weather events.

Short-term (0 – 1 year)

- Evaluate the acute physical risks our offices are exposed to
- Manage operational resilience

Medium-term (1- 5 years)

- Evaluate the acute physical risks to our lending and investing activities
- Evaluate the risk of our supply chain to acute physical risks
- Ensure robust risk mitigation is in place
- Ensure resilience in revenue towards acute physical risks through applying physical risk scenario analysis

Long-term (5 – 40 years)

- Continue to ensure robust mitigation of risks are in place through the ongoing evaluation of exposure towards acute physical risks in our business activities

Chronic physical risks

The risks of longer-term shifts in climate patterns that may cause sustained higher temperatures, rising sea levels, chronic heat waves, drought and water scarcity.

Short-term (0 – 1 year)

- Evaluate the chronic physical risks that our offices are exposed to
- Ensure operational resilience

Medium-term (1- 5 years)

- Evaluate the chronic physical risks that our lending and investing activities are exposed to with a focus on:
  - power generation, agriculture, and food and beverage sector, which may be affected by water scarcity
  - residential and commercial properties that may be affected by the continued rise in sea levels.
- Ensure resilience in our lending and investing activities towards chronic physical risks through applying physical risk scenario analysis

Long-term (5 – 40 years)

- Continue to ensure robust mitigation of risks are in place through the ongoing evaluation of exposure towards chronic physical risks in our business activities

Identification of climate-related transition risks

Transitioning to a zero-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk. Our mitigation approaches are set out below.

	Short-term (0 – 1 year)	Medium-term (1- 5 years)	Long-term (5 – 40 years)
Policy and legal risks	• Implement robust ESG policies and processes • Apply a balanced approach to meeting stakeholder expectations • Assess the alignment of our activities with the Paris Agreement goals	• Evaluate regulatory policies within each of the geographies that we operate in to ensure policy alignment towards the aspiration of zero-carbon world • Continue participating in industry initiatives to test and develop climate reporting methodologies	• Ensure continued policy alignment to the Paris Agreement goals within our core geographies • Continue to work with peers and industry bodies to align methodologies
Technology risks	• Drive innovation in line with the business objectives – integrating people, processes, systems and information • Ethical use of technology and the protection of client and employee privacy • Ongoing assessment of infrastructural efficiencies to reduce our environmental footprint	• Adoption of cloud services and reduction on the reliance of on-premise data centres, with an accelerated digitalisation initiative	• Appropriately respond to developments in the technology landscape, including the capturing of potential opportunities and the management of disruptive effects on the organisation
Market risks	• Establish a road map to calculate financed emissions • Report on industries exposed to high transition risk • Active engagement with clients to support them in implementing carbon reduction strategies	• Manage and minimise exposures to high emitting industries (e.g. fossil fuels) and work with those clients to shift to cleaner technologies as they become available	• Monitor, manage and limit our exposures to high transition risk industries • Work with clients to reach their net-zero targets
Reputational risks	• Provide meaningful, transparent and timely financial and non-financial information • Present a balanced assessment of our position with particular consideration to materiality	• Continue to engage with stakeholders to inform our climate strategy as it evolves	• Consistent and transparent reporting on climate risks, opportunities and exposures

Source: (Investec, 2020)

Climate-related risks are integrated into Schroders (Schroders, 2020) overall risk management process. Schroders describes how risk management for operations and financing activities are different. Business areas carry out risk assessments and develop plans to ensure continued operations in the case of a climate-related physical risk materialising. To manage investment risk, Schroders ensures that fund managers are able to identify and assess climate-related risks. Research analysts incorporate climate-related issues into company analysis that fund managers use. Analysts are assisted by the Sustainable Investment team which has developed proprietary tools.

5. Metrics and targets

"Investors and other stakeholders need to understand how an organization measures and monitors its climate-related risks and opportunities. Access to the metrics and targets used by an organization allows investors and other stakeholders to better assess the organization's potential risk-adjusted returns, ability to meet financial obligations, general exposure to climate-related issues, and progress in managing or adapting to those issues. They also provide a basis upon which investors and other stakeholders can compare organizations within a sector or industry" (TCFD, 2017).

Three disclosures are also recommended with respect to metrics and targets.

Metrics used to assess climate-related risks and opportunities in line with strategy and risk management processes

Box 8 presents a set of questions that can be used to guide disclosures on metrics and targets.

Box 8: Questions to guide disclosure of metrics used to assess climate risks and opportunities

- Which performance metrics does the company use to assess and manage financially material climate-related risks and opportunities such as those related to water, energy, land use, and waste management?
- Are these climate-related performance metrics incorporated into the company's remuneration policies? If so, how?
- Has the company established an internal carbon price?
- Does the company measure climate-related opportunities, such as revenue from products and services designed for a lower-carbon economy?
- How can metrics be presented to enable meaningful trend analysis?
- Are the methodologies used to calculate or estimate climate-related metrics clear?
- Do the metrics and targets disclosed provide historical trends and forward-looking projections (by relevant country and/or jurisdiction, business line, or asset type)?
- Do the metrics disclosed support the company's scenario analysis and strategic planning process? Do they enable monitoring of the organization's business environment from a strategic and risk management perspective?
- Are the company's GHG emissions calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions?
- Has the industry established any generally accepted GHG efficiency ratios that may warrant disclosure?
- Do GHG emissions disclosures include historical periods to allow for trend analysis?
- Are the methodologies used to calculate or estimate the metrics clear?

Source: (CDSB and SASB, 2019)

FirstRand (2021) discloses its emissions for both its own operations and limited financed emissions. This is in line with the TCFD supplemental guidance for asset managers, which states that asset managers should disclose the metrics used to assess climate-related risks and opportunities for each investment product (TCFD, 2017). FirstRand provides information on scope 1 and 2 emissions attributable to its South African advances portfolio and clearly states that it uses the PCAF's methodologies to calculate financed emissions. It has also set an internal carbon price, referred to as an internal shadow carbon price, in line with international good practice. This allows the company to consider carbon costs during the evaluation of new projects and helps incentivise a shift towards lower-carbon projects (Example 14).

Example 14: Metrics used to assess climate risks and opportunities at FirstRand

Financed emissions

FirstRand is a member of PCAF and has used its methodologies for calculating financed emissions in high-impact or material asset classes, including the corporate and commercial loan portfolio, motor vehicle loans and mortgages. PCAF is a global partnership of financial institutions working together to develop and implement a harmonised approach to assess and disclose the GHG emissions associated with loans and investments. The development of this methodology is ongoing, and the indicated ranges reflect estimated uncertainties which will be refined in future disclosures.

FirstRand utilises these estimates to assess whether its financed emissions are aligned with its intended role in the South African financial marketplace and to track the contribution of high emission intensity sectors.

The table below provides a view of emissions (scope 1 and 2) attributable to the South African advances portfolio, based on the proportional amount of funding provided by the group relative to the total asset or company value. The portfolios assessed make up R756 billion of FirstRand's total R930 billion advances in South Africa.

	June 2021 (Mt CO_2e) Attributable to FirstRand
Retail mortgages	3.2 – 4.7
Vehicle finance	1.9 – 2.8
Corporate and commercial loans	5.8 – 13.4

The group finances a low share of the total assets in high emission intensity industries in South Africa, such as thermal coal mining, electricity generation from fossil fuels, chemical and synthetic fuel production and oil and gas. In many cases these assets are financed directly by the debt capital and equity markets. As a result, FirstRand's overall share of South Africa's emissions is lower than the group's share of financing in the country.

As a first step, the group has set an internal shadow carbon price that will be used to consider carbon costs during the evaluation of new projects and infrastructure for the group's operations. This will help incentivise and prioritise low-carbon projects and support emission reductions.

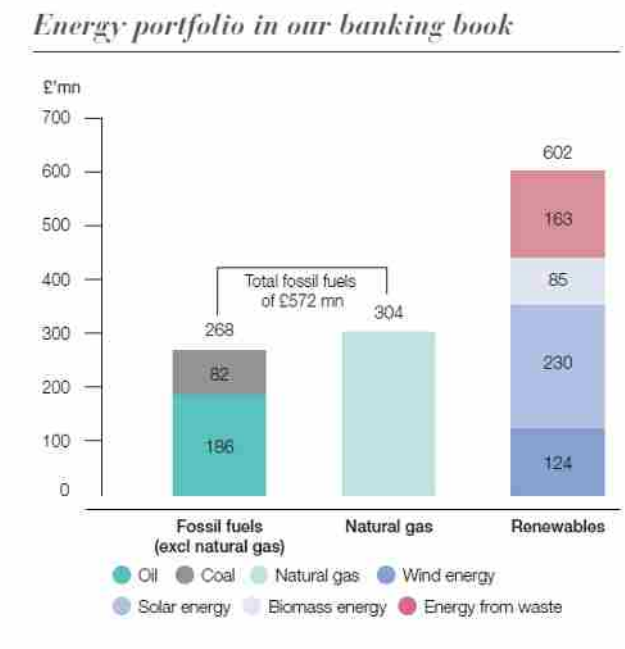
+ A shadow carbon price is a hypothetical monetary value for a tonne of CO_2 that accounts for the external social, environmental and economic costs of carbon emissions and climate change. This price incorporates the value of carbon (GHG emissions) into investment or project decisions (research and development), infrastructure and financial assets to cost for climate change impacts and drive emissions reductions.

+ FirstRand's shadow carbon price has been determined in line with international best practice in carbon pricing and what is needed to drive emissions reductions to meet the Paris Agreement targets of preventing a 2°C temperature change.

Source: (FirstRand, 2021)

Like FirstRand, Investec discloses both operational and financed emissions, providing more detail with respect to the latter. To understand its exposure to fossil fuels, Investec discloses information on its energy portfolio, which indicates that coal makes up 7% of its energy portfolio and fossil fuels make up almost half of its energy portfolio (see Example 15). This is disaggregated by country for the UK and South Africa, with fossil fuels making up 74% of its South African energy portfolio and 30% of its UK energy portfolio.

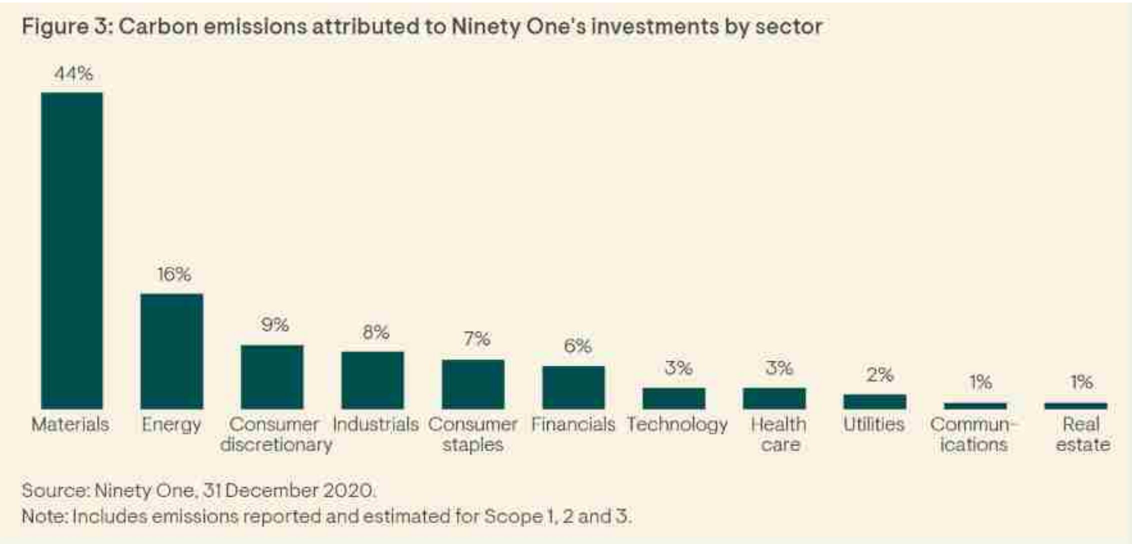
Example 15: Investec's exposure to fossil fuels



Source: (Investec, 2020)

Ninety One also discloses emissions attributed to investments by sector. Example 16 shows that materials and energy combined account for the majority of emissions from their portfolio. It also discloses relative and absolute financed emissions and compares them to benchmarks for developed and emerging markets.

Example 16: Ninety One's emissions disclosures by sector



TCFD recommended metrics	Scope 1+2			Scope 1+2+3		
	Ninety One investments	Developed market reference benchmark[2]	Emerging market reference benchmark[2]	Ninety One investments	Developed market reference benchmark[2]	Emerging market reference benchmark[2]
Weighted average carbon intensity [tCO_2e / mUSD revenue]	280	155	250	1,180	935	1,180
Total carbon emissions [tCO_2e]	10,100,000	6,300,000	12,400,000	57,700,000	39,700,000	57,800,000
Carbon footprint [tCO_2e / mUSD invested]	95	60	120	545	375	545
Carbon efficiency [tCO_2e / mUSD attributed revenue]	260	185	330	1,475	1,175	1,530

2. We use MSCI All Country World index and MSCI Emerging Markets Index as proxies, employing the same calculation methodology and tools to determine the carbon metrics. Note that the results may not be directly comparable with other estimates of the same indices.

Source: (Ninety One, 2021)

BlackRock presents data on a wide range of business and GHG emissions metrics in their disclosures.

Example 17: Metrics included in BlackRock's TCFD disclosures

(in metric tons of CO_2e)	2014	2015	2016	2017	2018	2019	% change*
Scope 1 and 2							
Scope 1	5,756	4,758	4,261	5,050	4,805		
Scope 2 Location-Based Approach	27,409	28,003	25,518	21,539	21,392		
Scope 2 Market-Based Approach	27,409	22,976	15,432	5,404	4,750		
Total Scope 1 and Scope 2 (location-based)	33,165	32,761	29,799	26,589	26,198		
Total Scope 1 and Scope 2 (market-based)	33,165	27,734	19,713	10,454	9,555		

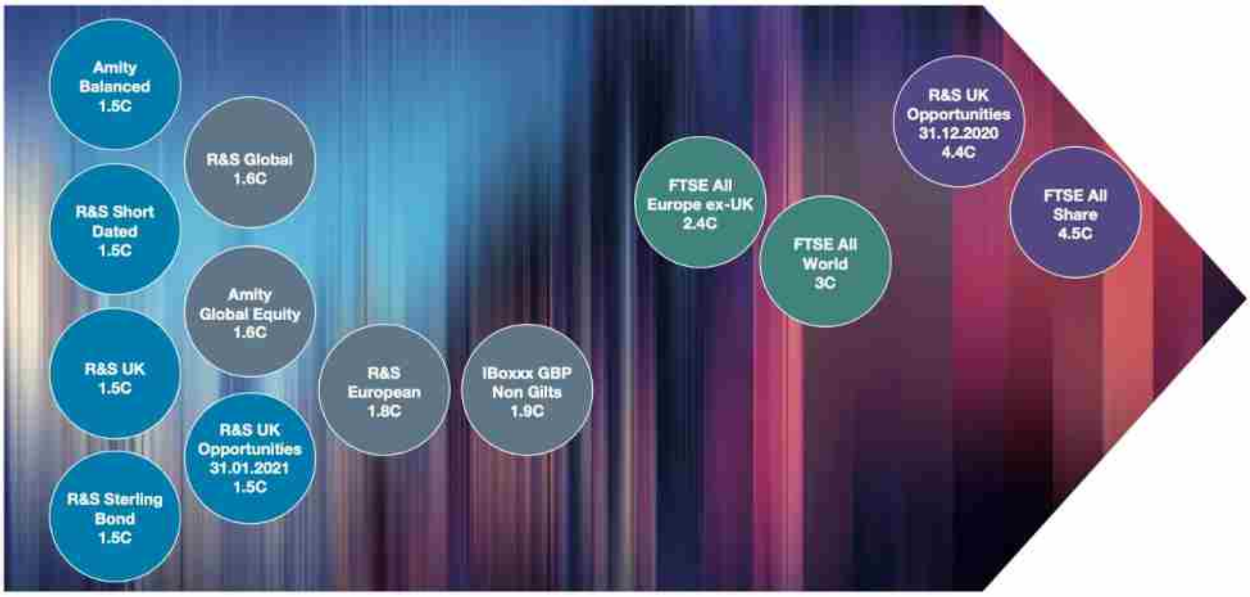
	(in metric tons of CO_2e)	2017	2018		
Upstream	1. Purchased Goods & Services	-	-		
	2. Capital Goods	-	-		
	3. Fuel- and Energy-Related Activities (location-based)	5,809	8,100		
	4. Transportation & Distribution (T&D)	-	-		
	5. Waste Generated in Operations	818	637		
	6. Business Travel	39,238	45,384		
	7. Employee Commuting (employee shuttles in India)	611	837		
	8. Leased Assets (location-based)	596	674	777	30%
Downstream	9. Transportation & Distribution	Not Relevant			
	10. Processing of Sold Products	Not Relevant			
	11. Use of Sold Products	Not Relevant			
	12. End-of-Life Treatment of Sold Products	Not Relevant			
	13. Leased Assets	Not Relevant			
	14. Franchises	Not Relevant			
	15. Investments	Weighted-average carbon intensity reported at product level. Additional reporting on this category in 2021			
Electricity					
	Total Electricity Consumed (MWh)	66,097	69,540	70,805	7%
	Percent Renewable Energy	80%	89%	100%	-
Intensity Metrics					
	Total Scope 1 & Scope 2 GHG Emissions per $1 million revenue	2.0	1.8	1.8	(10%)
	Facilities tCO_2e per Employee	1.9	1.7	1.6	(16%)
	Scope 3 Business Travel tCO_2e per Employee	2.8	2.9	2.3	(18%)

Business Indicators	2018	2019	2020	% change 2018-2020
Sustainable Investing AUM ($ billions)	$52	$107	$152	192%
Flows into Sustainable Products ($ billions)	-	$34	$39	-
ESG Screened AUM ($ billions)	$444	$547	$573	29%
ESG Integrated Active & Advisory Investment Portfolios (%)	-	-	100%	-
Investment Stewardship Team Size	36	45	50	39%
Total Investment Stewardship Engagements	2,049	2,050	3,043	49%
Total Investment Stewardship Engagements on Environment-Related Issues (# of engagements)	301	316	1,260	319%
Climate-Related Voting Action Taken (# companies)	4	5	63	1475%

Source: (BlackRock, 2020)

Finally, EdenTree Investment Management presents a quantitative assessment of the alignment of their own portfolio and FTSE benchmarks with various temperature scenarios as a metric that shows that their portfolios are in line with the Paris Agreement.

Example 18: EdenTree's alignment with various future temperature scenarios



Source: (EdenTree, 2021)

Metrics used to manage climate-related risks and opportunities and performance against targets

The final disclosure in the TCFD recommendations is on the targets used by the organization to manage climate-related risks and opportunities, and the performance against these targets.

Box 9: Questions to guide disclosure of targets and performance against targets

- Has the company established and communicated climate-related performance targets in line with anticipated regulatory requirements, market constraints, or other goals, such as operational or financial objectives or loss tolerances?

- Do disclosures specify whether targets are absolute or intensity-based, the time frames over which they apply, and the base year from which progress is measured?

Source: (CDSB and SASB, 2019)

Example 19 is an extract from Robeco's (2020) climate-related disclosure on its targets. Robeco currently has no clear emission reduction targets however they have indicated that they will set company-wide decarbonisation targets during the next reporting year that will include reduction targets for portfolios, climate-related investments, as well as engagement targets.

Example 19: Target setting at Robeco

Targets

For strategies that are branded sustainable (the SI Focused range), the target carbon footprint is 20% lower than the benchmark.

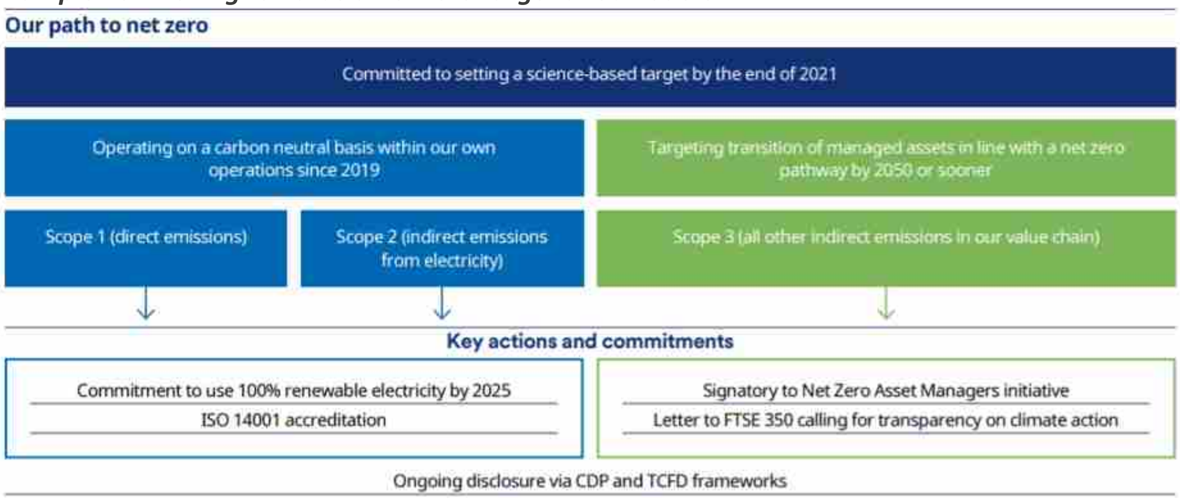
In September 2020, we expanded the scope of our fossil fuel exclusion policy. Companies that derive 25% or more of their revenues from thermal coal (power generation or mining) or oil sands, or 10% from Arctic drilling will be excluded from our funds. For sustainable strategies, we added exclusions for companies that derive 10% or more of their revenues from oil sands, or 5% from Arctic drilling. The new exclusions were completed by Q4 2020. For sustainable strategies, we already had in place an exclusion for companies that derive 10% or more of their revenues from thermal coal (power generation or mining).

In the course of 2021, Robeco will announce company-wide decarbonization targets, as per our commitment to the Dutch Climate Accord, the Net Zero Asset Managers initiative, and therewith the goals of the Paris Agreement. Our decarbonization strategy will comprise a combination of approaches, including carbon reduction targets for portfolios where possible, investment in climate solutions, and engagement with companies and policymakers.

Source: (Robeco, 2020)

Schroders presents another example of early-stage target-setting, through the disclosure that in the next reporting year commit to setting science-based targets, aligned with net zero (Example 20).

Example 20: Moving towards a net zero target at Schroders



Source: (Schroders, 2020)

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