



Climate Risk White Paper Series – Part 2

Climate scenario analysis: the devil is in the detail

This marketing document is exclusively for use by Professional Clients in Continental Europe (as defined in the important information), and Professional Clients in Dubai, Jersey, Guernsey, Ireland, Isle of Man and the UK. This document is not for consumer use, please do not redistribute.



Elizabeth Gillam
Head of EU Government Relations
and Public Policy



Maria Lombardo
Head of ESG Client Strategy EMEA



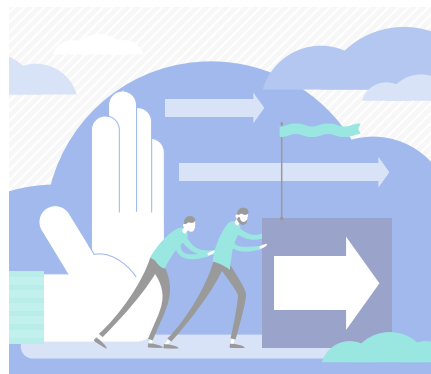
Sindhu Krishna
Head of Sustainable Investment,
Phoenix Group



Executive summary

- Spurred by regulatory, supervisory and investor-led initiatives, climate scenario analysis is rapidly emerging as an essential component of efforts to manage the risks around climate change.
- Like all financial institutions, insurers face enormous pressure to embrace developments in this sphere as part of the unfolding transition to a low-carbon economy and a Net Zero world.
- Reflecting a trajectory seen during the rise of environmental, social and governance (ESG) investing, the landscape of climate scenario analysis is at present complex and potentially confusing.
- In tandem, developments are increasingly encompassing not only the concept of risk but the notion of financial institutions as climate advocates committed to long-term, positive transformation.
- To navigate this fast-evolving space, practitioners need to understand the crucial choice between different approaches and the breadth of expert guidance and tools already available.
- In the face of further innovation and mounting policymaker pressure, a “wait and see” attitude is increasingly hard to justify. Insurers must close the circle of analysis, reporting and regulation as soon as possible.
- Insurers such as Phoenix Group have already taken the first steps on their multi-stage journey to Net Zero, with support from Invesco.

Part 1
**Climate risk and regulation:
full steam ahead**



Part 2
**Climate scenario analysis:
the devil is in the detail**



Part 2

Climate scenario analysis: the devil is in the detail

“Climate scenario analysis is likely to play a vital role in how insurers navigate the journey to a net-zero world. It should also be central to their own longer-term climate advocacy.”



Introduction

In the first paper in this series we explained how regulatory and supervisory pressure throughout Europe, and indeed globally, is forcing insurers, along with other financial institutions, to adopt a forward-looking approach when assessing and managing the risks around climate change. With policies once regarded as “nice-to-haves” rapidly becoming “must-haves”, we highlighted the need to take immediate action¹.

In this paper we explore in more detail the crucial question of climate scenario analysis. This is an area that is still taking shape, with a plethora of tools, metrics and initiatives emerging at pace as part of the broader shift towards a low-carbon economy. The landscape at present is complex and potentially confusing, yet the reality is that no insurer can afford to adopt a “wait and see” attitude.

The insurance sector’s direct impact in terms of climate change is, of course, relatively modest. This is not a resource-intensive industry, after all. Yet insurers are exposed to sizeable environmental risks through their investment portfolios and liabilities.

Climate scenario analysis is therefore likely to play a vital role in how insurers navigate the journey to a Net Zero world. Significantly, it should also be central to their own longer-term climate advocacy. In the following pages we outline how thinking in this space has developed to date, how it is likely to evolve over time and how it can be applied at various levels.

A key point that should be stressed from the outset is that this is not a “one size fits all” matter – even though some regulatory and supervisory outputs might imply that it is. What climate scenario analysis means in practice is likely to vary considerably from one insurer to another, and superior outcomes should ultimately stem from individual approaches.

Relatedly, there is already a huge amount of information that might be taken into account. We have seen this before, with ESG as a whole also

producing a superabundance of guidelines, frameworks and innovations as it migrated from the margins to the mainstream. Here, conscious of the necessary balance between apprising and overwhelming, we aim to cover what we see as the most important ground in reasonably short order.

We hope that this paper helps you appreciate the benefits of climate scenario analysis, the attributes of some of the leading models, the nuances of asset-level, portfolio-level and exposure-level application and the need to close the circle of analysis, reporting and regulation. Above all, we hope that it gives you a solid notion of how your own firm might use climate scenario analysis to best effect in the face of an increasingly pressing agenda for transforming policy into action.

Emergence and evolution: Climate analysis, financial analysis and the move to net zero

Investors have been assessing climate risk for some time. Such efforts initially took myriad forms, such as carbon footprinting, but they have become more systematic since the Task Force on Climate-related Financial Disclosures (TCFD) first released its recommendations in 2017². Ideally, alongside elements such as governance and engagement, climate scenario analysis should now be a major component of any assessment.

As explained in the first paper in this series, the essence of climate scenario analysis is to look forward rather than back. Models that rely exclusively on historical data are ill equipped to tackle climate change, as the relevant risks lie in the future. What is needed is a powerful strategic planning tool that assesses uncertainty within a financial, quantitative framework familiar to investors.

A key TCFD disclosure recommendation focuses on a company’s strategic resilience in light of different climate scenarios³. As shown in the illustration on page 3, this provides the vital link between climate analysis and financial analysis and, in tandem, between climate risk and financial risk.

At this stage we might broadly summarise the outputs that climate scenario analysis can deliver as follows:

- **Identify risk exposures:** Highlight companies or assets that should be areas for attention and risk management in any scenario
- **Identify safe valuation levels:** Outline the extent of possible impact, thereby informing a discount or premium on valuation

- **Identify catalysts for threats:** Provide a view of potential developments under various scenarios, allowing them to be tracked
- **Identify focus areas for engagement:** Highlight issues requiring direct dialogue or similar and/or possible comparisons of disclosure and actual response
- **Provide specific metrics:** Supply measures to be fed into the investment process (e.g. value at risk, opportunity, sensitivity to change)
- **Identify asset classes or sectors requiring greater scrutiny:** Deliver assessments at a wider level

A fundamental point here is that climate scenario analysis can inform portfolio management at a number of levels - for example, stock, asset class or sector. This reflects the fact that different areas of focus will be of relevance for different investors. For example, a large passive investor may wish to consider systemic risk rather than risk pertaining to a specific stock.

Also worth noting is the role that this type of analysis plays in defining and achieving climate-related targets. In effect, it encourages insurers and other financial institutions to take a leadership position in shaping and promoting decarbonisation and transition pathways.

TCFD's aforementioned recommendation on strategic resilience includes among its scenarios one based on the Paris Agreement's overarching objective of limiting the global temperature rise

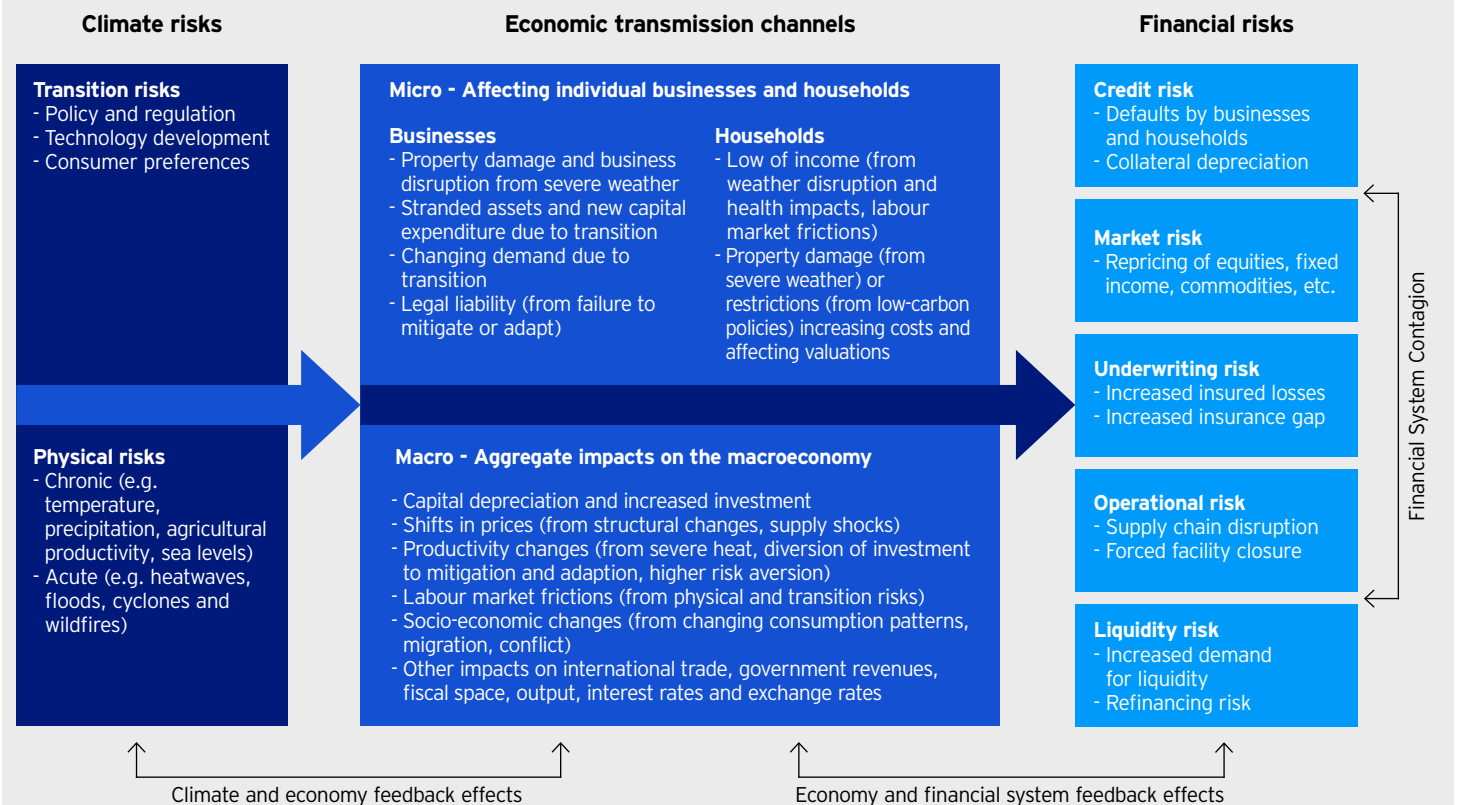
this century to below 2°C above pre-industrial levels. In fact, a more ambitious target of 1.5°C is emerging as the preferred standard of many investors - as is the notion of net zero. Such clearly stated objectives are helping not only to drive and synchronise risk-control efforts but to spur responsibility and accountability.

In other words, investors - and, by extension, the entities in which they invest - are no longer framing climate change purely in terms of risk. Thanks to climate scenario analysis, they are also framing it in terms of aspirations, objectives and their duties to stakeholders - including the planet and its inhabitants.

In keeping with this shift, investor-led initiatives generally place more emphasis on climate scenario analysis as a tool for defining and achieving targets. As such, climate scenario analysis is becoming a powerful accelerant of climate advocacy.

This reflects a holistic commitment among investors to aligning with climate-related goals - a journey that arguably began with the launch in 2006 of the UN-backed Principles for Responsible Investment (PRI). Other notable milestones include the establishing of Climate Action 100+ in 2017, the Investor Agenda and the One Planet Sovereign Wealth Fund in 2018, the Institutional Investors Group on Climate Change's (IIGCC) Paris-Aligned Investing Initiative in 2019 and Science-Based Targets in 2020. Investors' commitments to climate alignment continue to grow in number and scale and are increasingly defined by collaboration. We will explore some of these investor-led initiatives in more detail in section 6.

Transmission channels



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

Getting started with climate scenarios

A 2019 TCFD report found a high level of climate-related disclosure among insurers, with a majority laying out their processes for identifying, assessing and managing risks and opportunities. However, many made no mention of using climate scenario analysis⁴.

This is perhaps unsurprising. Awareness of climate scenario analysis is increasing, but implementation is another matter. The analytical task of creating scenarios can be relatively straightforward in sectors where climate risk is well understood, but the reality is that there are few such sectors at present.

According to an Investor Leadership Network (ILN) study, views of the use of climate scenario analysis remain mixed⁵. Many firms are bemused by an ever-expanding array of platforms, tools, methodologies and metrics, and vendors' "black box" processes can be hard to "own". In the words of ILN: "We are all at different stages of our journey applying scenario analysis, ranging from qualitative to quantitative approaches... Scenario analysis is not an easy, off-the-shelf approach. Rather, it is an iterative process that we will be adjusting as we progress."⁶

“What is needed is a powerful strategic planning tool that assesses uncertainty within a financial, quantitative framework familiar to investors.”

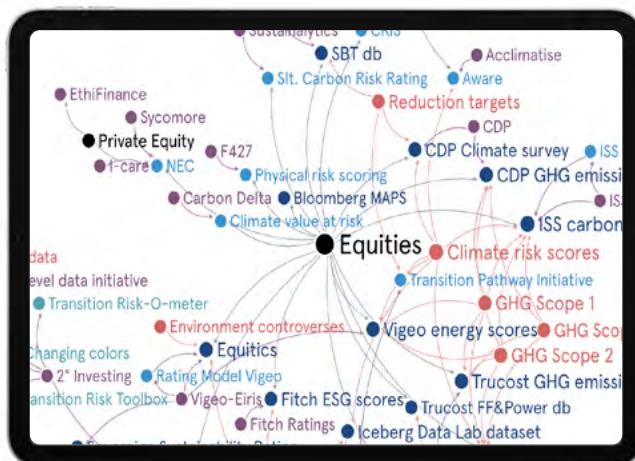
The key challenges to implementation for many organisations include the following:

- **Data:** Long-term projections of the risks and opportunities associated with the transition to a net-zero world are informed by various international and specialist organisations. The French Social Investment Forum's Climate Resources Cartography facility, as shown in the diagram below, offers a remarkable snapshot of the intricate web on which it is possible to draw⁷. However, an overall lack of guidance on the best sources for specific strategies - especially with regard to the availability of granular, business-level data - represents a major hurdle for many investors.
- **Time horizons:** TCFD refers to short-term, medium-term and long-term horizons when conducting climate scenario analysis, yet there is little agreement on how these should be used. Should an analysis focus on five-year intervals, for example, or should it simply target a date - say, 2030 or 2050?
- **Physical parameters:** Determining the physical parameters for climate scenario analysis can be confusing. For instance, the International Panel on Climate Change (IPCC) has set probabilities for 1.5°C, 2°C, 3°C and 4°C, delineating the corresponding likely physical impacts. How many parameters should a firm use? Is it reasonable to disregard some? How radical might a scenario be?
- **Asset-level versus portfolio-level application:** As mentioned earlier, climate scenario analysis can be applied at several levels. Asset-level application is most common; portfolio-level application is more difficult, as it is hard to come up with the parameters necessary to understand how a scenario might affect macroeconomic and other systemic factors.
- **Adaptability:** Climate scenario analysis usually involves assessing both underlying risk and adaptive capacity - that is, the ability to respond to said risk. This is in many ways a matter of accountability - a question of governance and strategic objectives - yet claims of adaptability can be tricky to prove or disprove.

These and other would-be barriers can lead to considerable difficulties in translating scenarios into business requirements. Importantly, they can also hamper attempts to characterise resiliency. As a result, many investors would like to see a more manifest move towards industry-wide consensus.

A snapshot of data sources for climate scenario analysis

[Click here to delve into the interactive map and explore the climate resource in more detail](#)



Source: French SIF Climate Resources Cartography

While getting started with climate scenario analysis can seem like a daunting task, many firms have found it helpful to start small and define some parameters for how they wish to approach the task.

Some key considerations that firms may wish to consider, include:

- 1. Climate mitigation or climate alignment?** Climate scenario analysis can be used both to measure climate risks to a portfolio but also to measure alignment to a specific climate outcome, such as achieving Net Zero, and the choice as to the ultimate aim of the exercise will likely steer firms in terms of choice of tools.
- 2. Top-down or bottom-up approach?** Firms may wish to consider whether the aim is to have a top-down view across their portfolio to inform strategic decision-making or a bottom-up approach at stock-level to feed in to investment analysis.
- 3. Internal expertise or external collaboration?** Firms may wish to develop proprietary models, building on available guidance such as the Intergovernmental Panel on Climate Change (IPCC) sectoral decarbonisation pathway and the Network for Greening the Financial System (NGFS) scenarios that they can tailor to their business model and their own views regarding climate scenarios. However, such an approach can be time consuming and firms may prefer to collaborate with external partners to develop and leverage their expertise.
- 4. Asset classes covered?** Firms may wish to consider whether to start with certain asset classes, for example listed equities and corporate bonds where data and methodologies are more developed, before diving in to other asset classes such as sovereign debt or private assets where data and tools may be more developmental in nature.

The answers to these questions may influence firms' decisions about the appropriate tools that they will deploy and to help firms to define criteria to assess the assumptions and inputs of available tools. We believe that the path towards climate scenario analysis is a learning curve for many firms and that approaches will mature as firms develop knowledge and expertise in these new tools and how to tailor them to their own needs.

“The analytical task of creating scenarios can be relatively straightforward in sectors where climate risk is well understood, but the reality is that there are few such sectors at present.”

A closer look at scenario application

At this stage, drawing on both the contents of this paper so far and those of its predecessor, we might usefully take stock of what we know about climate scenario analysis.

In this chapter, mindful of all of the above, we take a closer look at scenario application by exploring the thinking behind some of the better-known tools currently available. A key point of this exercise is to address a concern that we raised in introducing this paper and which has been re-emphasised throughout – that insurers, along with other financial institutions and investors of all types, cannot afford to adopt a “wait and see” attitude.

Those prepared to wait and see if something akin to perfection eventually emerges in this sphere are likely to prove especially misguided. We know that climate scenario analysis is far from perfect at present, but we also know that it is essential to act now. No investor should delay taking action in the hope that companies will one day provide flawless, irrefutable disclosures.

Investors can instead build their own scenario analysis engines to better evaluate the companies or sectors that they follow. Importantly, as the CFA Institute has observed, this does not have to mean constructing tools from scratch⁸.

There are already numerous tools – some commercial, others open-source – that can translate economic and physical climate models into tractable data sets suitable for financial institutions, and there will undoubtedly be more to come. In the following sections we consider how to make a choice of the currently available scenarios analytics and processes depending on their applications and objectives.

Key questions when assessing climate scenario tools

1. What are the outputs?
2. What climate-related risks and opportunities are covered?
3. What emissions scenario(s) and time horizon(s) are covered?
4. What sectors are covered by the data or analysis?
5. What geography is covered and at what resolution?

Source: TCFD: Guidance on Scenario Analysis for Non-Financial Companies, 2020

To fully exploit these tools, it is important that firms understand the underlying assumptions that are used and therefore how to interpret the results of such analysis. In this section, we will explore some of the main factors and differences between some of the leading open-source and commercial tools currently available to insurers, including the outputs and inputs of the models.

Scenarios analysis offer an indication of the impact of climate risks on investments in the future years. This impact can be calculated via different methodologies and will vary depending on the reference temperature alignment. Scenarios can also be applied to the entirety of the investment portfolio, to a single portfolio or at asset class level.

3 methodologies

There are three commonly used methodologies: the cost impairment; the climate VAR (Value at Risk) and exposure gap (via PACTA scenarios). There are also three commonly used temperature references 2C, 3C and 4C. Recently however the temperature reference of 1.5C has been incorporate in line with the aim of assessing investments not only in line with Paris Agreement but with the scope of reaching a Net Zero target in the design of their strategy.

The **cost impairment** methodology, otherwise called impairment value, consists of isolating transition and physical risk factors to map their respective impacts. It particularly focuses on spending, transition, resource availability and the impact of natural catastrophes and extreme weather.

Following analysis of these factors, the sensitivity of different asset classes and industries/sectors to climate change can be determined. A final step is to calculate effects on annual return, as revealed by the interactions between scenario pathways and sensitivities. The impairment value methodology offers a breakdown of the cost and benefits of the scenarios and allow the incorporations of these impacts, quantified and qualified in their nature, to be incorporated in a financial model.

The **“climate value-at-risk” (climate VaR)** analysis on the other hand, is expressed in the form of percentage points, a climate VaR output that indicates the potential impact on a security's market value as a result of the effects of climate change. This type of output offer an easily comparable indicator between portfolios or single assets, even though it may not present a granular breakdown of its component that define the transition risks and opportunities and physical risks and opportunities⁹. Both impairment value and C-Var offer a valuation of transition and physical risks and take into account climate opportunities in new technology and innovation. The methodologies behind these scenarios are applied on corporates and better fit the equity investable universe. Recent developments and efforts have been dedicated to the analysis of corporate bonds, even if still more at issuers levels rather than single issue, sovereign bonds and real estates. We expect more to come on commodities and derivative instruments and other alternative asset classes. We compare impairment value and climate VaR approaches in more detail in the table at the end of this chapter.

The **Exposure Gap** Methodology or PACTA Paris Agreement Capital Transition Assessment (PACTA) scenario methodology is focused on calculating the transition risks only. It was created by the 2^o Investing Initiative (2DII), a non-profit think-tank, and it is available in an open source online tool. Covering equity and bond issuers, it analyses companies' investment and production plans in both high-emitting activities and low-carbon solutions.

These plans are then compared with a technology-and-energy mix thought consistent with the trajectory towards a given scenario. Several scenarios are available, including those developed by IEA to align with temperature targets of 1.75°C and 2°C.

As **PACTA** takes into consideration only transition risks, it does not quantify the financial risks or losses resulting from different scenarios. The output is a “technology exposure gap”, showing the degree to which investment and production plans within a portfolio are aligned with a particular scenario. Such an analysis might in itself meet an investor's objectives; alternatively, it could inform deeper research or product design¹⁰.

A growing number of data and service providers in the ESG space have been developing climate analytics toolkits with an increase level of sophistications on the methodologies and the data sources on one hand, and the development of user friendly platform and output reporting on the other.

The flexibility of these platforms allows the user to customise their choices on both the methodologies and assumptions used and, on the scope, and outputs. In additions these models can offer various level of assessment that will help the user to identify areas of intervention or design investment strategies.

The process for defining scenario analysis typically consists of four key building blocks: defining the scenario pathway, translating these pathways into economics shocks, assessing such shocks on asset value streams and ultimately, resulting in the financial implications to the asset or portfolio.

There are a wide array of scenarios to choose from and selecting the

appropriate scenarios and, critically, understanding the assumptions that underpin them, for example the extent to which carbon reduction technologies will play a role and the implied carbon price, can be confusing. However, this is where policymakers and regulators, through the work of the IPCC, the IEA and, in particular, the model scenarios developed by the NGFS can be particularly helpful for firms starting out on this journey. The chosen scenario translates modelling components into outputs of the key economic variables needed for the ensuing steps.

The scenario outputs next create economic shocks, which are then further quantified by examining financial asset exposure, modelling business responses to shocks and also factoring in competition dynamics such as exit or the passing through of costs to consumers. Finally, a discounted cashflow approach is applied to calculate the net present value of financial valuation impacts, used for equities or a default risk model is used to calculate the impacts for bonds.

Invesco used similar insights to inform its own 2019 Invesco Climate Change Report. This described our approach to assessing and managing climate risks and opportunities across our investment processes and business operations and marked the start of our own TCFD reporting journey¹¹.

Which climate scenario analysis tool is best suited to a particular organisation is likely to hinge on a number of considerations and uses.. For example when the scenarios incorporate climate cost/benefits into financial modelling, approaches favouring the identification of impairment value might be better suited for active management and portfolio strategy designing. While approaches favouring climate VaR, a form of standalone analysis that lends itself to screening, might be better suited to passive/factor-driven investing and for comparability.

Sample comparison of climate scenario analysis tools

		Type of Scenarios		
		PACTA Exposure Gap	Value Impairment	C-Var
Outputs and Definition of the approached		Portfolio's exposure to high-carbon and low-carbon activities in five years, based on current revealed production and investment plans of companies in portfolio	Value impairment – visualising changes to current valuation of financial assets from each climate scenario in waterfall format, broken down by sources of risk	Climate value-at-risk – percentage-points indication of potential impact on security's market value as result of effects of climate change
Processes	Typical Temperature alignment scenarios	2°C (1.5°C in development)	4°C, 2°C and 1.5°C	3°C, 2°C and 1.5°C
	Framework building blocks	Map physical assets data (e.g. current and future productions) to owners, generating energy transition profiles for securities, and compare to climate scenarios	Scenarios create economic shocks, which affect asset value streams with financial impacts	Transition risks, physical risks and technology opportunities (e.g. patents, green revenues)
	Risks considered	Transition risks only (including six IEA scenarios)	Transition risks and physical risks and Opportunities	
	Timeline	5 years rolling	30 years or longer	30 years or longer
	Asset classes covered	Listed equities, corporate bonds and corporate loans	Listed equities, corporate bonds and corporate loans. Real Estate Alternatives	Listed equities and Bonds
	Industries covered	Energy (fossil fuels), power, transport (light/heavy-duty vehicles, aviation, shipping) and industrial sectors (cement, steel)	All major industries	All major industries

Source: Invesco; as at January 2021; for illustrative purposes only

Closing the circle: Transition, Science based targets and Net Zero

Closing the circle of analysis, reporting and regulation is becoming an increasingly significant task for insurers and other financial institutions as the journey to net zero continues. With this essential objective in mind, additional means of assisting transition and transformation should not be overlooked.

Transition Pathway Initiative

One such is the Transition Pathway Initiative (TPI). Launched in 2017, it is led by asset owners and backed by asset managers. By calculating scores for management quality and “carbon performance”, it assesses companies’ preparedness to move to a low-carbon economy.

Management quality is determined on the strength of how a business manages GHG emissions and the risks and opportunities around the low-carbon transition. Carbon performance – both present and future – is analysed relative to sectoral benchmarks, based on a range of climate scenarios. Results are provided through an online tool and are intended to support investment decisions and engagement alike¹².

Another such initiative is the Science-Based Targets initiative (SBTi).

A partnership between CDP (formerly the Carbon Disclosure Project), the UN Global Compact, the World Resources Institute (WRI) and the World Wide Fund for Nature (WWF), SBTi aims to show companies how much and how quickly they need to reduce their GHG emissions to prevent the worst effects of climate change¹³.

In 2020 – two years after embarking on a project to develop specific target-setting methods, validation criteria

and recommendations – SBTi produced specialised guidance for the financial services sector¹⁴. In so doing it recognised that financial institutions differ from actors in other economic sectors, in so far as they provide services to entities that are responsible for reducing emissions – as opposed to having direct control over emissions themselves.

Science-Based Targets

SBTi stresses that its approach to the financial sector focuses on trackable activities. This, it says, reflects the limited evidence and understanding with regard to the climate-related impacts of portfolios. Assessment of physical and transition risks, emissions measurement and disclosure, monitoring of mitigation actions and performance are among the activities that seek to link financial flows with reducing GHGs in the real economy. The first phase of SBTi’s project proposed three methods: a sectoral decarbonisation approach (SDA), a science-based targets (SBT) portfolio coverage approach and a temperature rating approach. These are detailed in the table below, as are the means by which they are connected to different asset classes.

SBTi plans to elaborate on its framework in 2021, with a focus on “net-zero targets for financial institutions, resources for additional asset classes and activities... [and] a revised multi-method tool”.

It notes that “new systems take time to establish”, but – echoing our own view – it stresses that the tools available now can “augment the enabling role of financial institutions to more effectively connect climate insights and capital”.¹⁵

“Closing the circle of analysis, reporting and regulation is becoming an increasingly significant task for insurers and other financial institutions as the journey to net zero continues.”

SBTi approaches for financial institutions, by asset class

Asset Class	Method	Description
Real estate	SDA	Emissions-based physical intensity targets set for non-residential buildings’ intensity and total GHG emissions
Mortgages	SDA	Emissions-based physical intensity targets set for residential buildings’ intensity and total GHG emissions
Electricity generation project finance	SDA	Emissions-based physical intensity targets set for projects’ intensity and total GHG emissions
Corporate instruments (equity, bonds, loans)	SDA	Emissions-based physical intensity targets set at sector level within portfolio for sectors where sectoral decarbonisation approaches are available
	SBT portfolio coverage	Financial institutions engage portion of investees to have their own science-based targets, such that 100% coverage will be reached by 2040
	Temperature rating	Enable financial institutions to determine current temperature rating of portfolios and take actions to align with long-term temperature goals by engaging with companies to set ambitious targets (e.g. 1.7°C in 2025)

Source: SBTi: Financial Sector Science-Based Targets Guidance – Pilot Version, 2020

Net Zero framework

Perhaps most significantly of all, IIGCC's Net Zero Investment Framework is designed to translate the objectives of the Paris Agreement into practical guidance by offering a common understanding of approaches and methodologies¹⁷.

Launched in 2020, with Invesco part of the working group for the second stage of its development, the framework is intended to help investors "maximise the contribution they make in tackling climate change and achieving net-zero emissions globally by 2050". In the words of IIGCC: "It provides a comprehensive set of recommended actions, metrics and methodologies, which, following finalisation, will seek to enable both asset owners and asset managers to effectively become 'net-zero investors'."

Four asset classes - sovereign bonds, corporate fixed income, listed equities and real estate - are covered at present, with more to follow.

Again, alignment with a global temperature rise of 1.5°C is a fundamental goal. The table below encapsulates the thinking behind the framework and its implementation, with climate scenario analysis again to the fore.

The Net Zero Framework initiative is linked to the Net Zero Asset Owner Alliance¹⁸ and the Net Zero Asset Management Initiative¹⁹. The former has published the Inaugural Target Setting Protocol²⁰ that sets out how individual members will set a target, achievable in the next five years.

Alliance members have used IPCC 1.5C no- and low- pathways to inform their targets under the Protocol, which carefully balances scientific ambition, active ownership engagement, and divestment constraints. The Protocol covers multiple asset classes, and encompasses even the hardest-to-abate sectors.

Taking a sectoral approach means that these investors will be stepping up their work to move high carbon companies to make the changes required for the net-zero transition. This is in line with the Science-Based Targets initiative's Sector Decarbonization Approach, among others.

The Protocol also provides guidance for asset owners to set interim financing targets and enable their collective capital to boost the investments needed to transition to a net-zero emissions world and supports Alliance members' efforts to align their policy advocacy with the net zero objective - engaging governments to help ensure that industries, and indeed

The 4-part target setting structure of the Target Setting Protocol¹⁶

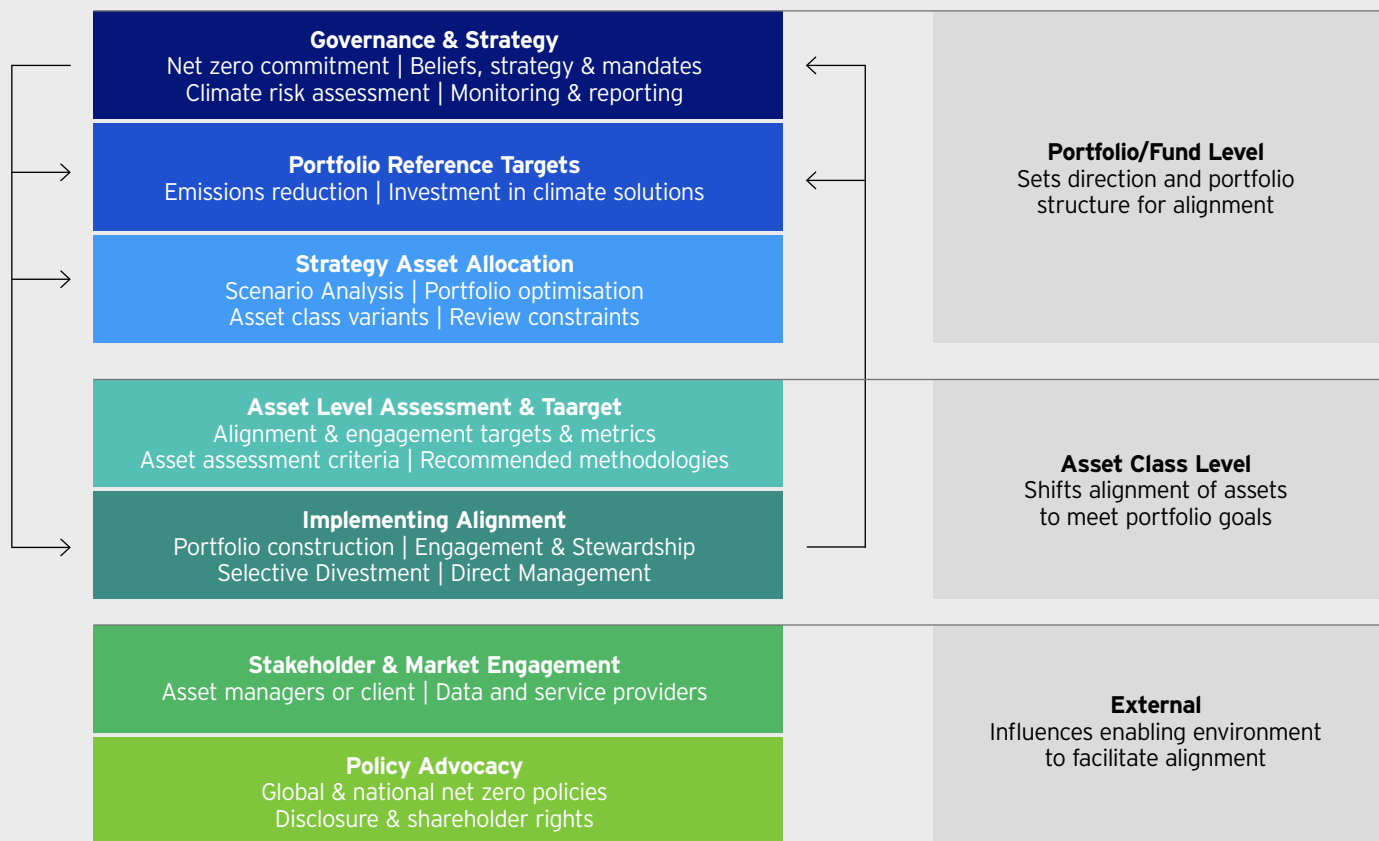


Source: U.N.-Convened Net-Zero Asset Owner Alliance, 2020

the global economy, have supporting policies in place to enable a rapid and smooth transition. This Protocol, and the individual investor targets that will follow, represent the first time major investors are making such transparent commitments, from pension funds to private insurance companies, to sovereign wealth funds.



IIGCC's Net Zero Investment Framework



Source: IIGCC: Net Zero Investment Framework Presentation, 2020

As a result of the **Net Zero Asset Owners Alliance**, the Asset managers launched in December 2020, the **Net Zero Asset Managers Initiative** with the aim to identify with the asset owners the assets under management to commit to Net Zero by 2050 .

These and many other initiatives are reshaping the investment value chain - in which insurers, as asset owners, occupy a place on the top tier. As we will see next, though, just as investor commitment to climate alignment continues to grow, so, too, does the fragmentation of means of assessment - which can make climate scenario analysis seem a daunting prospect.

“Investor-led initiatives generally place more emphasis on climate scenario analysis as a tool for defining and achieving targets.”



Case study: Phoenix Insurance and the path to Net Zero



Sindhu Krishna
Head of Sustainable Investment,
Phoenix Group



The Phoenix Group is the UK's largest long-term savings and retirement business, with c.14 million customers and £338 billion of assets under administration. Its heritage business, which is a market leader is focused on the safe and efficient management of insurance policies whilst the Open business comprises products that are actively marketed to new and existing customers and has five separate business units.

Phoenix takes a proactive approach to responsible investment. It aims to manage assets in a way that embeds ESG considerations into its investment decision-making process and stewardship activities. Its strategy seeks to safeguard the interests of customers, shareholders and society over the long term, and, in accordance with science based targets.

In this Q&A Sindhu Krishna, the company's Head of Sustainable Investments, explains Phoenix's science-driven approach to achieving its overarching target of its investment portfolio being net-zero carbon by 2050 and discusses the importance of consistent metrics, shared expertise and regular milestones in the quest to decarbonise portfolios.

How did Phoenix Group come to commit to net zero?

Our approach to climate change is at the heart of our sustainability strategy and our approach to responsible investment. As a long-term asset owner, we have a duty to safeguard our customers' and shareholders' investments in the face of arguably one of the biggest challenges confronting the planet.

The importance of that duty is now being visibly highlighted in a number of ways. There's the regulatory backdrop, with major initiatives requiring a clear focus on sustainability. There's a growing awareness among society as a whole, particularly millennials and subsequent generations, that this thinking is crucial to our shared future. And there's the expectation from investors, who increasingly see ESG in general embedded into their decision making.

All these varying dynamics recognise that climate change represents environmental, social and economic risk. To combat this, we're committed to supporting the goals of Paris Agreement. We have committed to becoming net zero carbon in our operations by 2025 and in our investment portfolio by 2050 and we're committed to addressing risks and capturing opportunities as we follow this trajectory.

How exactly do you plan to fulfil these commitments?

The first milestone of our net zero strategy relates to our own operations. As a business, we've set a target of being net zero carbon by 2025 and we plan to achieve this by cutting the greenhouse gas emissions generated by our premises and by business travel. This is a key consideration of the new hybrid model we are designing to ensure we are an agile business. We recently carried out research to understand how people can work in a more environmentally friendly when they are working from home.

The second milestone relates to decarbonising our investment portfolios to be net zero carbon by 2050, in accordance with science-based targets. There are many considerations in realising this objective, but our immediate focus is on our equity and liquid credit portfolios.

Our process involves three elements. As well as reducing portfolios' GHG emissions, it's important to increase allocations to investments in climate solutions such as renewable energy, low-carbon buildings and energy-efficient technologies. There are huge, sustainability-focused opportunities to which the investor community should divert capital. Finally, Stewardship also has a vital role to play, as we can help influence investee companies in transitioning to a low-carbon economy.

Have you encountered any particular challenges so far?

I think the key challenge at the moment is consistency in terms of definition and approach. Based on our involvement with the IIGCC, we are working on our road map to achieving net zero, paying careful consideration to which metrics and KPIs we should use. We're proactively engaging with all of our asset management partners to ensure that we are as aligned as we can be.

Of course, this is the whole point of IIGCC's Net Zero Investment Framework - to translate the aims of the Paris Agreement into practical guidance by providing a common understanding of approaches and methodologies. Going forward, this is what we need to establish across the industry.

Aside from IIGCC, who else has helped frame your process?

What's especially exciting for us, is that we are able to work with best-in-class asset management partners, such as Invesco, all of whom contribute to and shape our thinking. It's great to partner with managers that can help to develop our understanding, because the solution to the climate crisis requires an enormous amount of collaboration, and resources.

We will continue to look to engage with initiatives, alliances, frameworks, policymakers and other stakeholders that are important to the journey we are going on, and will help us and our sector to reach that all important end goal. Collaboration and knowledge exchange are crucial, because we have to develop a shared understanding and shared goals. Thinking in this space is evolving all the time and it will be a multi-stage journey.

How do you structure these stages?

Our approach is both science-based and target-driven and we recognise the journey consists of a series of small steps. It's not just a case of seeing where we might be in 2050 - we are setting interim targets that need to be validated as we progress on our journey.

This encourages us to keep building momentum, which is vital. We are setting smaller milestones in order to reach our major milestones. Every step we take is significant, and it's essential to understand exactly how it moves us closer to our commitment of becoming net zero.

What would you say to businesses that are content to "wait and see"?

Responding to the financial risks and opportunities that arise from climate change is crucial. As the UK's largest long term savings business, we aim to take a proactive approach to all aspects of responsible investing - and addressing the threat of climate change certainly offers no exception.

I think this really ties in with the different scenarios we see in climate scenario analysis. What we're trying to achieve is an orderly transition to a low-carbon economy, and that means incremental change.

This is a massive undertaking, a long journey, and it can't be done overnight. It has to be done step by step. Climate scenario analysis suggests an abrupt change will bring much more uncertainty. The more phased the transition is, the better the results are likely to be for everybody. That's why we all need to contribute to the solution.

“Financial institutions that persist with a ‘wait and see’ attitude will not only fall foul of ever-stricter regulatory and supervisory demands: they will also fall short of what clients, stakeholders and the wider world expect from them.”

Conclusion

We end this paper much as we began its predecessor - with an acknowledgment that managing the risks around climate change is central to the way ahead and that climate scenario analysis, in turn, must underpin this task. It is already expected, and there are ample grounds for believing that it will very soon be mandatory - which is why we stress once more that insurers must act now.

We have seen that progress in this field is nascent but rapid and that there are difficulties to overcome and choices to be made. It is again worth remembering that something very similar was witnessed during the rise of ESG as a whole and that what might have seemed entirely novel and challenging just a few years ago is now largely normal, familiar and understood. Such is the nature of innovation, positive disruption and progress.

We have seen, too, that developments are increasingly embracing not just the underpinning idea of risk but the increase opportunities that climate innovation is bringing. Insurers should be further spurred to act- and, indeed, the obligation - to play a substantive role in bringing about long-term, positive transformation.

As TCFD observed in its landmark Recommendations of the Task Force on Climate-related Financial Disclosures: “The risk climate changes poses to businesses and financial markets is real and already present. It is more important than ever that businesses lead in understanding and responding to these risks - and seizing the opportunities - to build a stronger, more resilient and sustainable global economy.”

Those words were written four years ago, since which time their message has taken on even more urgency. The journey to net zero is unfolding at pace, and for the insurance industry - as for other financial institutions and investors - 2021 is likely to prove crucial in shaping the way ahead.

References and suggested further reading

- 2DII: Bridging the Gap: Measuring Progress on the Climate Goal Alignment and Climate Actions of Swiss Financial Institutions, 2020
- Cambridge Institute for Sustainability Leadership: ClimateWise Principles Independent Review, 2019
- CDSB: Falling Short? Why Environmental and Climate-Related Disclosures Under the EU Non-Financial Reporting Directive Must Improve, 2020
- CDSB: TCFD Knowledge Hub (www.tcfdhub.org)
- CICERO Centre for International Climate Research: Climate Scenarios Demystified, 2018
- Citi Research: ESG in European Insurance: Nothing Is More Expensive Than a Missed Opportunity, 2020
- EFRAG: How to Improve Climate-Related Reporting: A Summary of Good Practices from Europe and Beyond, 2020
- EIOPA: Financial Stability Report July 2020, 2020
- Electrical Power Research Institute: Grounding Decisions: A Scientific Foundation for Companies Considering Global Climate Scenarios and Greenhouse Gas Goals, 2018
- European Commission: Climate Benchmarks and Benchmarks' ESG Disclosures, 2019
- IIF: Climate-Related Financial Disclosures: Examples of Leading Practices, 2019
- IIGCC: Navigating Climate Scenario Analysis, 2019
- IIGCC: Net Zero Investment Framework for Consultation, 2020
- IIGCC: Net Zero Investment Framework Presentation, 2020
- ILN: TCFD Implementation: Practical Insights and Perspectives from Behind the Scenes for Institutional Investors, 2020
- Invesco: 2019 Invesco Climate Change Report, 2020
- Lombardo, M, and Gillam, E: Climate Risk and Regulation: Full Steam Ahead, 2020
- MSCI: Climate Value-at-Risk: Powering Better Investment Decisions for a Better World, 2020
- NGFS: Climate Scenarios for Central Banks and Supervisors, 2020
- NGFS: Guide to Climate Scenario Analysis for Central Banks and Supervisors, 2020
- PCAF: The Global GHG Accounting and Reporting Standard for the Financial Industry, 2020
- SBTi: Financial Sector Science-Based Targets Guidance – Pilot Version, 2020
- SBTi: Science-Based Targets (www.sciencebasedtargets.org)
- ShareAction Asset Owners Disclosure Project: Got It Covered? Insurance in a Changing Climate, 2018
- ShareAction Asset Owners Disclosure Project: Winning Climate Strategies, 2018
- ShareAction Asset Owners Disclosure Project: Insuring a Low-Carbon Future, 2019
- SIF: Forum pour l'Investissement Responsable (www.frenchsif.org)
- TCFD: 2019 Status Report, 2019
- TCFD: Guidance on Risk Management Integration and Disclosure, Forward-Looking Financial Sector Metrics, 2020
- TCFD: Guidance on Scenario Analysis for Non-Financial Companies, 2020
- TCFD: Measuring Portfolio Alignment: Assessing the Position of Companies and Portfolios on the Path to Net Zero, 2020
- TCFD: Recommendations of the Task Force on Climate-related Financial Disclosures, 2017
- TCFD: The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities, 2020
- TCFD Consortium: Guidance on Climate-Related Financial Disclosures 2.0, 2020
- TEG on Sustainable Finance: Final Report on Climate Benchmarks and Benchmark ESG Disclosures, 2019
- TEG on Sustainable Finance: Taxonomy: Final Report of the Technical Expert Group on Sustainable Finance, 2020
- TPI: Transition Pathway Initiative (www.transitionpathwayinitiative.org)
- UNEP FI: Using Hindsight and Foresight: Enhancing the Insurance Industry's Assessment of Climate Change Futures, 2020
- UN PRI: Pathways to Net Zero: Scenario Architecture for Strategic Resilience Testing and Planning, 2020

TCFD table of recommended disclosures

In section 3.1 we drew attention to one of TCFD's key disclosure recommendations, which focuses on a company's strategic resilience in light of different climate scenarios. The table below summarises all TCFD's disclosure recommendations, spanning governance, strategy, risk management and metrics/targets.

TCFD table of recommended disclosures

Governance	Strategy	Risk Management	Metrics & 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 company's businesses, strategy, and financial planning where such information is material.	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 where such information is material.
Recommended Disclosures	Recommended Disclosures	Recommended Disclosures	Recommended Disclosures
a) Describe the board's oversight of climate-related risks and opportunities. b) Describe management's role in assessing and managing climate-related risks and opportunity.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	a) Describe the organization's processes for identifying and assessing climate-related risk. b) Describe the organization's processes for managing climate-related risks. c) Describe how processes for identifying, assessing, and managing climate-related risks are intergrated into the organization's overall risk management.	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) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks. c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

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

PCAF overview of investor-led initiatives

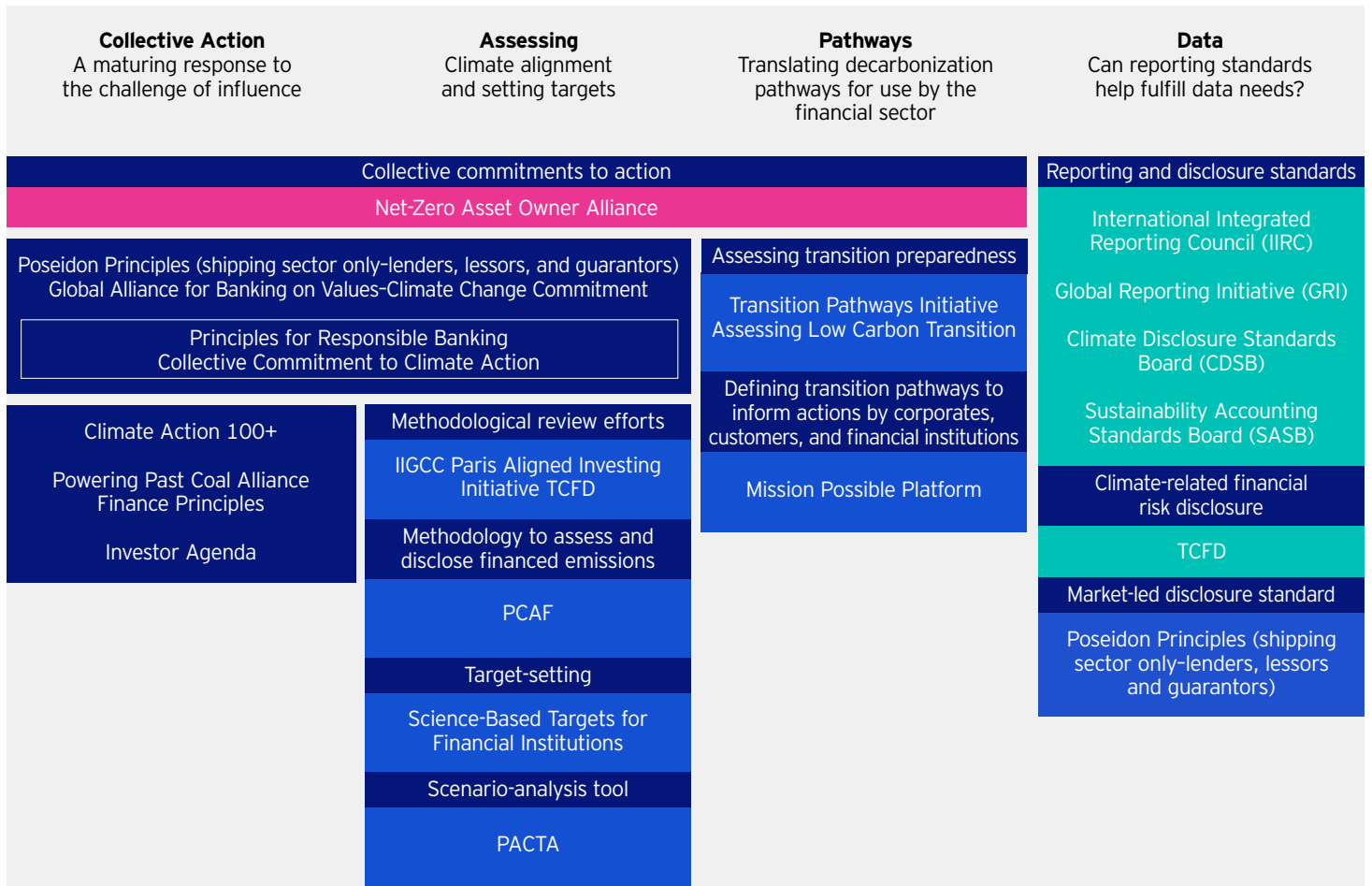
In section 8.2 we remarked on PCAF's overview of the investor-led, collaborative, goals-driven initiatives intended to help the journey towards a low-carbon economy and a net-zero world. This overview is presented in the table below. Note the number of initiatives that feature climate scenario analysis or are specifically focused on it.

	Banks	Investors	Banks & Investors	Focus of Initiative	High-level Commitment to Act	Measuring Financed Emissions	Scenario Analysis	Target-setting	Enabling Action	Reporting
UN Environment Program for Financial Institutions (UNEP FI) Principles for Responsible Banking (PRB): Collective Commitment on Climate Action					●					
Climate Action in Financial Institutions					●					
Investor Agenda: Investor Agenda Climate Plan (IACP)					●					
UN Global Compact: Business Ambition for 1.5°C					●					
U.N.-Convened Net-Zero Asset Owner Alliance								●		
Task Force on Climate-related Financial Disclosures (TCFD)										●
Partnership for Carbon Accounting Financials (PCAF)						●				
RMI Center for Climate-Aligned Finance							●			
2dii Paris Agreement Capital Transition Assessment (PACTA)							●			
IIGCC Paris Aligned Investment Initiative (PAII)								●		
SBTi-Finance								●		
Climate Action 100+									●	
Climate Safe Learning Lab									●	
Powering Past Coal Alliance Finance Principles									●	
Bankers for Climate									●	
2dii Evidence for Impact									●	
CDP Financial Services Questionnaire										●

Source: PCAF: The Global GHG Accounting and Reporting Standard for the Financial Industry, 2020

RMI overview of investor-led initiatives

The Rocky Mountain Institute (RMI) is a US-based organisation dedicated to research, publication, consulting and lecturing in the field of sustainability. It provides a further useful snapshot of efforts to encourage financial institutions to act on their climate-change commitments, as shown below.



Source: RMI: Breaking the Code: Deciphering Climate Action Efforts in the Financial Sector, 2020

¹ See Lombardo, M, and Gillam, E: Climate Risk and Regulation: Full Steam Ahead, 2020.
² See TCFD: Recommendations of the Task Force on Climate-related Financial Disclosures, 2017.
³ The exact wording of this recommendation is as follows: "Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario." See Appendices (section 9.1) for an illustration of how this sits within the broader context of TCFD's recommendations on governance, strategy, risk management and metrics/targets.
⁴ See TCFD: 2019 Status Report, 2019.
⁵ See ILN: TCFD Implementation: Practical Insights and Perspectives from Behind the Scenes for Institutional Investors, 2020.
⁶ Ibid.
⁷ The map is a regularly updated feature of the French Social Investment Forum's website. See SIF: Forum pour l'Investissement Responsable (www.frenchsif.org).
⁸ See CFA Institute: Climate Change Analysis in the Investment Process, 2020.
⁹ See, for example, MSCI: Climate Value-at-Risk, 2020.
¹⁰ See, for example, 2DII: Bridging the Gap: Measuring Progress on the Climate Goal Alignment and Climate Actions of Swiss Financial Institutions, 2020.
¹¹ Introducing the report, Invesco's President and CEO, Marty Flanagan, said: "The TCFD framework aligns with our belief: climate change is a strategic business issue that can impact long-term financial performance. This belief guides our approach as a corporate, making the TCFD a valuable frame of reference for engaging with investee corporates on issues relating to their own climate strategy."
¹² See TPI: Transition Pathway Initiative (www.transitionpathwayinitiative.org).
¹³ See SBTi: Science-Based Targets (www.sciencebasedtargets.org).
¹⁴ See SBTi: Financial Sector Science-Based Targets Guidance - Pilot Version, 2020.
¹⁵ Ibid.
¹⁷ See, for example, IIGCC: Navigating Climate Scenario Analysis, 2019; and Net Zero Investment Framework for Consultation, 2020.
¹⁸ <https://www.unepfi.org/net-zero-alliance/>. The United Nations-convened Net-Zero Asset Owner Alliance is an international group of 33 institutional investors committing to transition their investment portfolios to net-zero GHG emissions by 2050. Representing \$5.1 trillion assets under management it shows united investor action to align portfolios with a 1.5°C scenario, addressing Article 2.1c of the Paris Agreement.
¹⁹ <https://www.netzeroassetmanagers.org/>
²⁰ <https://www.unepfi.org/wordpress/wp-content/uploads/2021/01/Alliance-Target-Setting-Protocol-2021.pdf>
¹⁶ <https://www.unepfi.org/wordpress/wp-content/uploads/2021/01/Alliance-Target-Setting-Protocol-2021.pdf> page 9

Important information

This document contains information provided for illustrative purposes only. It is reserved exclusively for professional investors in Continental Europe (as defined in the important information) and Professional Clients in Dubai, Jersey, Guernsey, Ireland, Isle of Man and the UK.

Where individuals or the business have expressed opinions, they are based on current market conditions, they may differ from those of other investment professionals and are subject to change without notice. By accepting this material, you consent to communicate with us in English, unless you inform us otherwise.

For the distribution of this document, Continental Europe is defined as Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Luxembourg, Liechtenstein, Netherlands, Norway, Portugal, Spain, Sweden and Switzerland.

This document is issued by:

- Invesco Asset Management Deutschland GmbH, An der Welle 5, 60322 Frankfurt am Main, Germany
- Invesco Management S.A., President Building, 37A Avenue JF Kennedy, L-1855 Luxembourg, regulated by the Commission de Surveillance du Secteur Financier, Luxembourg
- Invesco Asset Management Limited, Perpetual Park, Perpetual Park Drive, Henley-on-Thames, Oxfordshire RG9 1HH, UK. Authorised and regulated by the Financial Conduct Authority
- Invesco Asset Management (Schweiz) AG, Talacker 34, 8001 Zurich, Switzerland.
- Invesco Asset Management Limited, PO Box 506599, DIFC Precinct Building No 4, Level 3, Office 305, Dubai, United Arab Emirates. Regulated by the Dubai Financial Services Authority.

EMEA3172/2021