สถาบันวิจัยเพื่อการพัฒนาประเทศไทย

TDRI THAILAND DEVELOPMENT RESEARCH INSTITUTE

Guidelines for Climate Risk Management Series

# Webinar 2:

# Strategy / Investment Management

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March 2023

# GUIDELINES FOR CLIMATE RISK MANAGEMENT SERIES

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES


## Session 1: Introduction to TCFD and Governance

## Session 2: Strategy / Investment Management

## Session 3: Risk Management & Metrics and Targets

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# SESSION 2 CONTENT

- Background and recap
- TCFD Pillar 2: Strategy
- A) Risks and opportunities
  - TCFD's classification of risks
- B) Impact assessment
- C) Strategy resilience
  - Scenario analysis
- Case studies
- Discussion points
- Q&A

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# TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES()

- TCFD is not just a climate disclosure framework, but it can be a strategic management framework
  - To help organization manage risks and opportunities in a more forward looking way
- To comply with the TCFD recommendations, companies need to disclose how climate change impacts their business model across four key pillars:


- **Governance**

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

1) Board oversight
2) Management's role

- **Strategy**

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

1) Risks and opportunities
2) Impact on organization
3) Resilience of strategy

- **Risk management**

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

1) Risk identification and assessment processes
2) Risk management processes
3) Integration to overall risk management

- **Metrics and targets**

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

1) Climate-related metrics
2) Scope 1, 2, 3 GHG Emissions
3) Climate-related targets

# TCFD: GOVERNANCE

## Governance

**a) Board oversight:**

describe the board's oversight of climate-related risks and opportunities

**b) Management's role:**

describe management's role in assessing and managing climate-related risks and opportunities

**Fiduciary duty: clients rely on reporting/information from asset managers to understand how climate-related risks and opportunities are managed.**

# TCFD: GOVERNANCE

Poll: Does your company/organization have the governance in place?

1) Yes – We have the governance structure that include both board, management and functional levels.

2) Partly in place – We are in the process of strengthening the governance structure.

3) In the planning process – We are working on it!

4) Not sure – I am not sure.

5) Others … please share with us

# CHALLENGES – GOVERNANCE PILLAR

- Board and senior management commitment
- Integration with existing processes
- Resources and allocation of duties/responsibilities
- Although there are guidelines and recommendations, there is no one-size-fit-all governance structure;
  - The process by which the board members are informed about the climate-related issues and how they monitor the targets and performance
  - Delegation of the responsibility to a particular executive or different executives?
  - Whether asset management firms should have CSO, working group(s), functional group(s)?
  - How the policies are communicated and cascaded to operational functions?
  - Whether and how remuneration policy is linked to climate-related performance? What could be appropriate short-term or long-term performance indicators?

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# CLIMATE RELATED RISKS, OPPORTUNITIES, AND FINANCIAL IMPACTS

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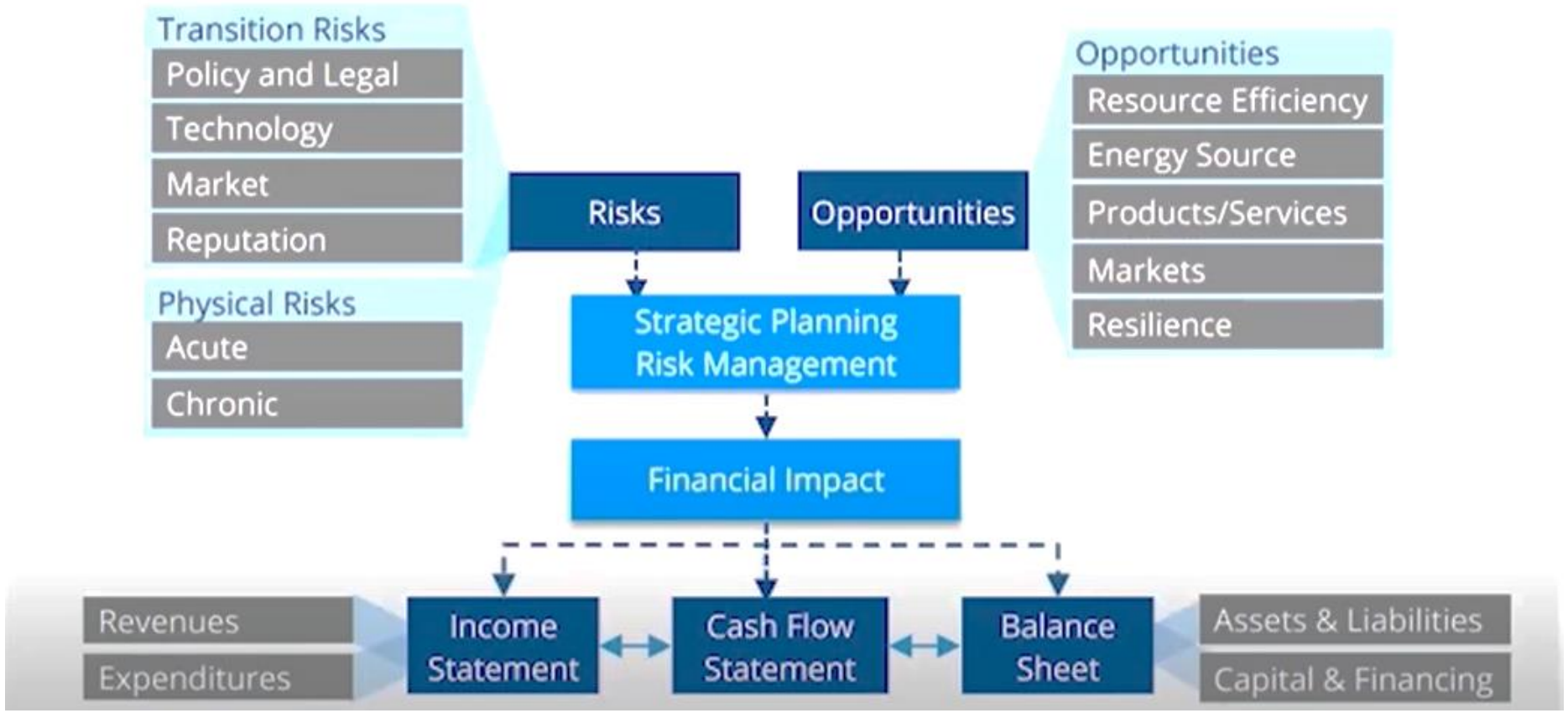
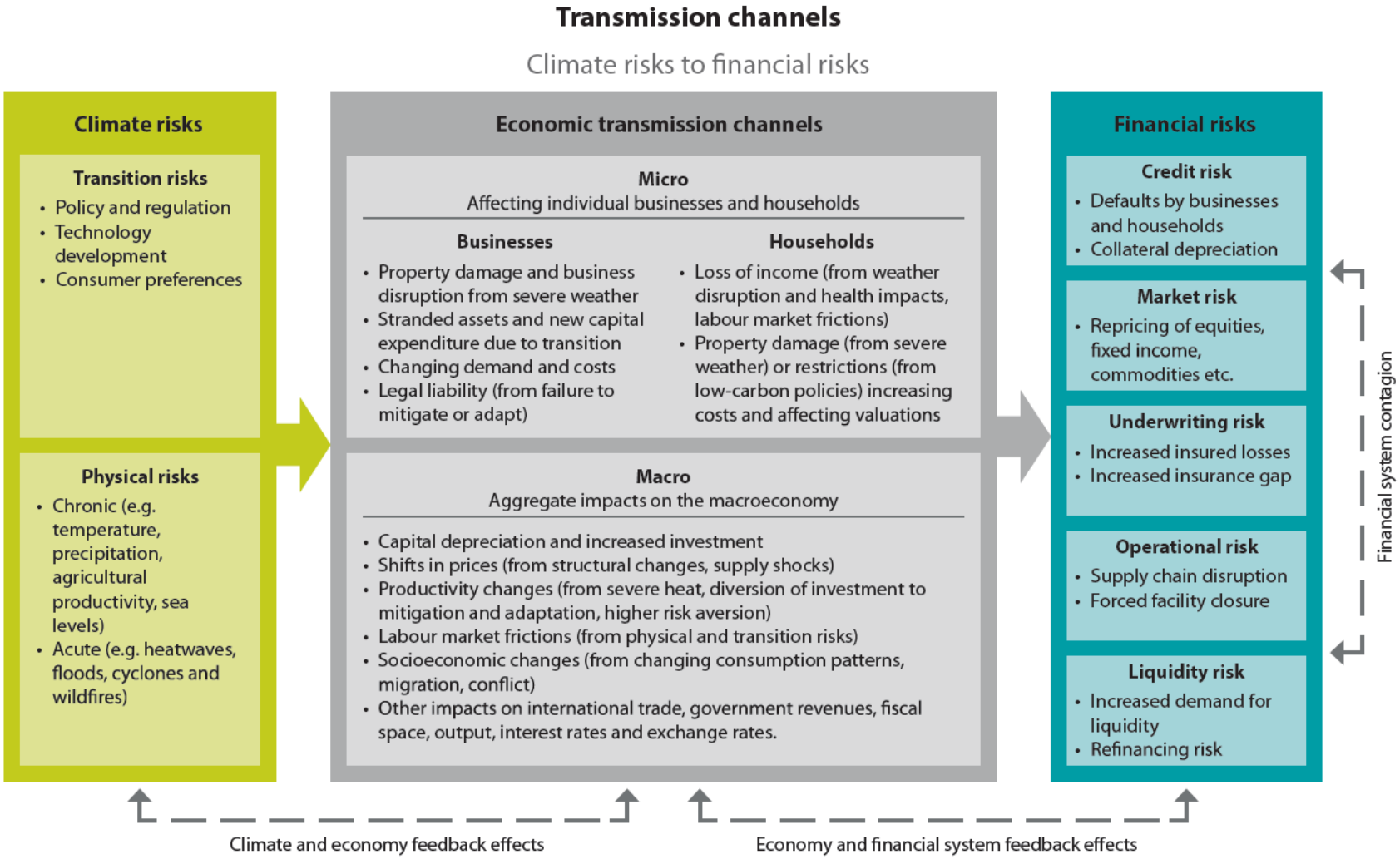
The risks and opportunities need to be linked with strategy formation and financial impacts.




Source: TCFD

# FROM CLIMATE RISKS TO FINANCIAL RISKS






Source: NGFS climate scenarios for central banks and supervisors

"It is vital that **investors understand** how the **transition to net zero** as well as **physical climate change** may affect the long-term returns of the companies and markets they invest in.

Climate change needs to be **integrated into every investment decision**. We believe that doing so will enable us to build **more resilient portfolios** and generate **better long-term returns** for clients."

Amanda Young

Chief Sustainability Officer



Source: abrdn TCFD Report 2021

# TCFD PILLAR 2: STRATEGY

## Strategy

### a) Risks and opportunities:

Identify climate risks and opportunities (short-medium-long terms); and also identify the **identification process** (e.g. by sector, geographical location)

### b) Impact on organization:

Describe impact of those climate-related risks and opportunities on the **businesses**, **strategies** (e.g. products/services, supply chain, mitigation/adaptation) and **financial planning** (e.g. capital allocation, acquisition or divestment)

### c) Resilience of strategy:

Describe the resilience of the strategy, taking into account **different climate scenarios** - how and whether the strategies will be changed.

**Asset managers:**

- How the risks and opportunities are factored into relevant products or investment strategies?
- How each product and investment strategy might be affected by the low carbon economy transition?

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# TCFD PILLAR 2: STRATEGY

## a) Risks and opportunities*:

Identify climate-related **risks and opportunities** (short-medium-long terms); and also identify the **identification process**; consider provide a description of the risks and opportunities by sector and/or geographical location.

>> many of the companies started by **disclosing climate-related opportunities** relevant to certain areas of their business along with broad, industry-wide **climate-related risks**.

*was one of the recommended disclosures most commonly addressed in financial/annual filings.

>> Early disclosures often did not include information on time horizons associated with risks and opportunities.

>> Over the time, companies began to describe **specific climate-related risks** that had impacted or could impact their strategy, business, or financial planning in terms of location of disclosure.



Source: TCFD and TCFD Status Report 2022

# TCFD: CLASSIFICATION OF RISKS AND OPPORTUNITIES

## *Strategy a)*: Climate-Related Risks and Opportunities

### Examples of Climate-Related Risks

| | |
|---|---|
| **Physical Risks** | **Acute**<br>• Increased severity of extreme weather events such as cyclones and floods<br>**Chronic**<br>• Changing weather patterns and rising mean temperature and sea levels |
| **Transition Risks** | **Policy and Legal**<br>• Increased pricing of GHG emissions<br>• Enhanced emissions-reporting, obligations<br>• Mandates on and regulation of existing products and services<br>• Exposure to litigation<br>**Technology**<br>• Substitution of existing products and services with lower emissions options<br>• Unsuccessful investment in new technologies<br>• Costs to transition to lower emissions technology<br>**Market**<br>• Changing customer behavior<br>• Uncertainty in market signals<br>• Increased cost of raw materials<br>**Reputation**<br>• Shifts in consumer preferences<br>• Stigmatization of sector<br>• Increased stakeholder concern or negative stakeholder feedback |

### Examples of Climate-Related Opportunities

| | |
|---|---|
| **Resource Efficiency** | • Use of more efficient modes of transport and production and distribution processes<br>• Use of recycling<br>• Move to more efficient buildings<br>• Reduced water usage and consumption |
| **Energy Source** | • Use of lower-emission sources of energy<br>• Use of supportive policy incentives<br>• Use of new technologies<br>• Participation in carbon market |
| **Products & Services** | • Development and/or expansion of low emission goods and services<br>• Development of climate adaption and insurance risk solutions<br>• Development of new products or services through R&D and innovation |
| **Markets** | • Access to new markets<br>• Use of public-sector incentives<br>• Access to new assets and locations needing insurance coverage |
| **Resilience** | • Participation in renewable energy programs and adoption of energy-efficiency measures<br>• Resource substitutes/diversification |

Source: TCFD

# CLIMATE-RELATED RISKS TO FINANCIAL IMPACT: PHYSICAL RISKS

| | |
|---|---|
| **Physical Risks** | **Acute**<br>• Increased severity of extreme weather events such as cyclones and floods |
| | **Chronic**<br>• Changing weather patterns and rising mean temperature and sea levels |

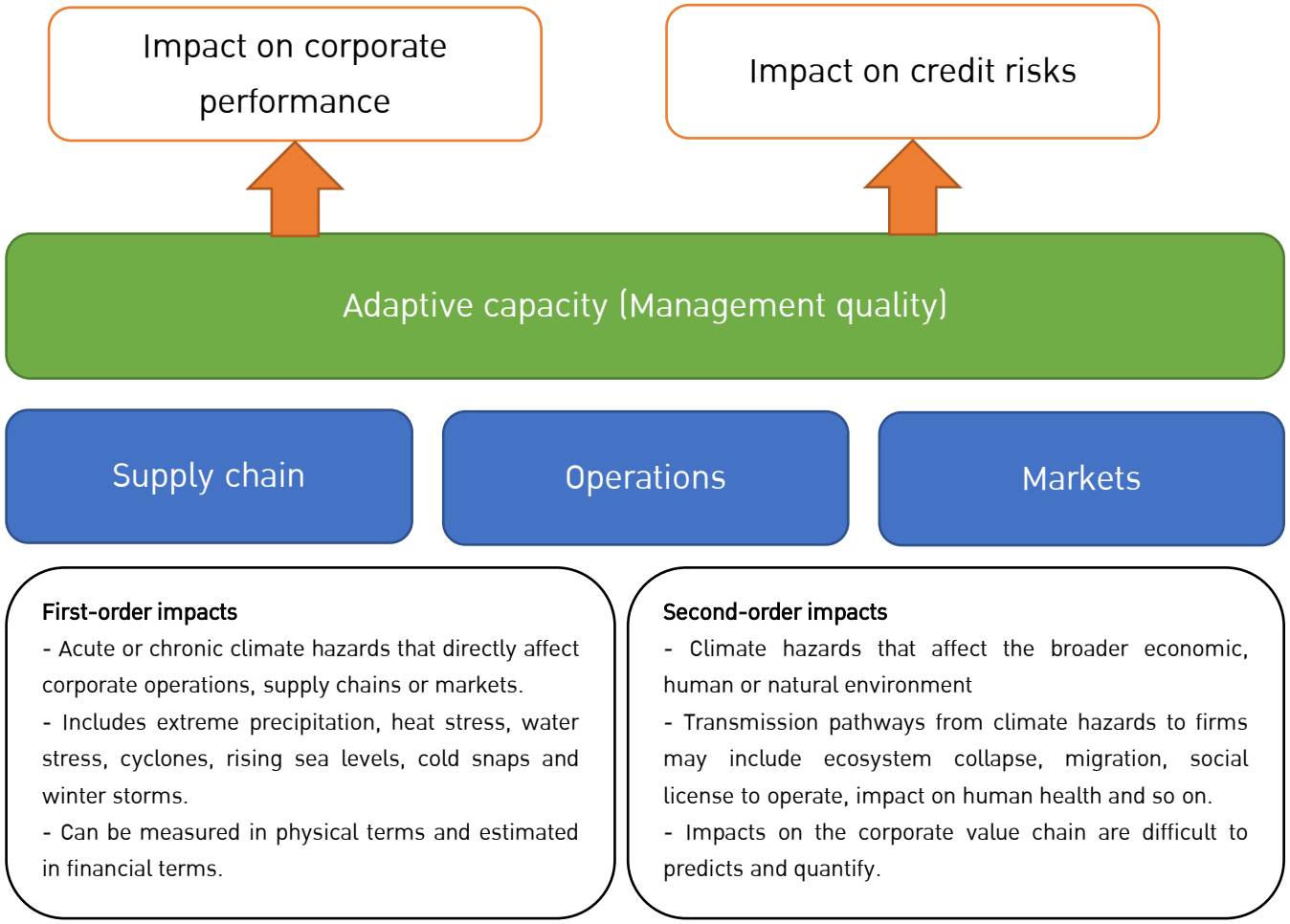
Acute and chronic:

- Reduced revenue from decreased production capacity (e.g. supply chain disruption)
- Increased operating costs (e.g. health and safety issues of the workforce)
- Write-offs and early retirement of existing assets (especially assets in high-risk locations)
- Increased capital costs due to damage of assets
- Increased insurance premium / no insurance available on high-risk assets



Source: TCFD

# THINKING ABOUT PHYSICAL RISKS




**Some useful recommendations to consider physical risks:**

**Recommendation 1**: Assess exposure to all first-order physical climate impacts across the value chain.

**Recommendation 2:** Assess physical climate risks over the duration of an asset's lifetime or over the lifetime of a financial instrument (using probabilistic approach or scenario analysis).

**Recommendation 3:** Disclose locations that are critical to value chains (e.g. country or city, breakdown of sales by country/segment).

**Recommendation 4:** Provide detailed information on the financial impacts of recent extreme weather events (e.g. decreased production capacity, increased costs/CAPEX, reduced revenues).



Source: Advancing TCFD guidance on physical climate risks and opportunities

# THINKING ABOUT PHYSICAL RISKS

This sensitivity matrix is indicative only and should not be used as a substitute for a materiality assessment for any individual corporation.

| GICS sector | GICS industry group | Storms and cyclones | Extreme rainfall and flood | Extreme heat | Variability in precipitation | Variability in temperature | Water stress | Sea-level rise | Other climate hazards |
|---|---|---|---|---|---|---|---|---|---|
| Consumer discretionary | Automobiles and components | High | High | High | Medium | High | Medium | High | Degraded air quality |
| | Consumer durables and apparel | High | High | High | Medium | High | Medium | High | Degraded air quality |
| | Consumer services | High | High | Low | Medium | Medium | Medium | High | |
| | Media | High | High | Low | Low | Low | Low | High | |
| | Retailing | High | High | Low | Low | Low | Low | High | |
| Consumer Staples | Food and staples retailing | High | High | Low | Medium | Medium | Medium | High | |
| | Food, beverage and tobacco | High | High | Medium | High | High | High | High | Soil degradation, ocean acidification |
| | Household and personal products | High | High | Medium | Medium | High | Medium | High | |
| Energy | Energy | High | High | High | Medium | High | Medium | High | Icemelt, permafrost melt |
| Financials | Banks | High | High | Low | Low | Low | Low | High | |
| | Diversified financials | High | High | Low | Low | Low | Low | High | |
| | Insurance | High | High | Medium | Medium | Medium | Medium | High | Hail storms, landslides, wildfires |
| Health care | Healthcare equipment and services | High | High | High | Low | Low | Medium | High | Wildfires, humidity, degraded air quality |
| | Pharmaceuticals, biotechnology and life sciences | High | High | High | Medium | High | Medium | High | |
| Industrials | Capital goods | High | High | High | High | Medium | High | High | |
| | Commercial and professional services | High | High | Low | Low | Low | Low | High | |
| | Transport | High | High | Medium | Low | Low | Low | High | Permafrost melt, ice melt |
| Information technology | Semi-conductors | High | High | High | Low | High | Medium | High | |
| | Software and Services | High | High | Low | Low | Low | Low | High | |
| | Technology hardware and equipment | High | High | High | Low | High | Medium | High | |
| Materials | Materials | High | High | High | High | High | High | High | |
| Real estate | Real estate | High | High | Low | Low | Low | Low | High | |
| Telecommunication services | Telecommunication services | High | High | Low | Low | Low | Low | High | |
| Utilities | Utilities | High | High | High | High | High | High | High | Wildfires |

Source: Source: Four Twenty Seven (© Four Twenty Seven 2017) as cited in Advancing TCFD guidance on physical climate risks and opportunities

# CLIMATE-RELATED RISKS TO FINANCIAL IMPACT: TRANSITION RISKS

| | |
|---|---|
| **Transition Risks** | **Policy and Legal**<br>• Increased pricing of GHG emissions<br>• Enhanced emissions-reporting, obligations<br>• Mandates on and regulation of existing products and services<br>• Exposure to litigation |
| | **Technology**<br>• Substitution of existing products and services with lower emissions options<br>• Unsuccessful investment in new technologies<br>• Costs to transition to lower emissions technology |
| | **Market**<br>• Changing customer behavior<br>• Uncertainty in market signals<br>• Increased cost of raw materials |
| | **Reputation**<br>• Shifts in consumer preferences<br>• Stigmatization of sector<br>• Increased stakeholder concern or negative stakeholder feedback |

Policy and legal:
- Increased compliance and litigation costs
- Early retirement of assets

Technology:
- Reduced demand for products or services
- R&D expenditure and investment

Market:
- Increased production costs (energy, water, waste management)
- Reduced demand for products or services
- Repricing of assets (fossil fuel reserves)

Reputation:
- Reduced revenue from workforce management and planning
- Reduced revenue from decreased production capacity
- Reduced demand for products or services

Source: TCFD

# CLIMATE-RELATED OPPORTUNITIES TO FINANCIAL IMPACT

| | |
|---|---|
| **Resource Efficiency** | • Use of more efficient modes of transport and production and distribution processes<br>• Use of recycling<br>• Move to more efficient buildings<br>• Reduced water usage and consumption |
| **Energy Source** | • Use of lower-emission sources of energy<br>• Use of supportive policy incentives<br>• Use of new technologies<br>• Participation in carbon market |
| **Products & Services** | • Development and/or expansion of low emission goods and services<br>• Development of climate adaption and insurance risk solutions<br>• Development of new products or services through R&D and innovation |
| **Markets** | • Access to new markets<br>• Use of public-sector incentives<br>• Access to new assets and locations needing insurance coverage |
| **Resilience** | • Participation in renewable energy programs and adoption of energy-efficiency measures<br>• Resource substitutes/diversification |

Source: TCFD

Resource Efficiency:
- Reduced operational costs
- Increased production capacity

Energy Source:
- Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon
- Increased capital availability (e.g., as more investors favor lower-emissions producers)

Products and Services:
- Increased revenue through demand for lower emissions products and services
- Better competitive solutions resulting in increased revenue

Markets:
- Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks)
- Increased diversification of financial assets (e.g., green bonds and infrastructure)

Resilience:
- Increased market valuation through resilience planning (e.g., infrastructure, land, buildings)
- Increased reliability of supply chain and ability to operate under various conditions

# NEW PRODUCTS/SERVICES DUE TO CLIMATE-RELATED RISKS

For assets managers, new products/services due to climate related risks include “Sustainable funds”, “Green bonds”, “Green funds”.


Source: Global Survey of Climate Risk Management at Financial Firms 2021

# CLIMATE-RELATED RISKS AND OPPORTUNITIES TO FINANCIAL IMPACT

Introduced regulation

Carbon pricing

Phase out combustion vehicles

**Energy sector:**
- Low carbon economy
- Fossil fuel phase out
- Technology change (CCS/CCUS)

**Industry and manufacturing:**
- Increased solar panel or products related to renewable energy use
- Increased EV manufacturing

**Risks and opportunities:**
- Increased compliance and litigation costs
- Early retirement of assets
- Reduced demand on carbon-intensive vehicles
- Investment opportunities

# Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

June 2017

Table A3

## Sectors and Industries Affected by Climate-Related Risks

| Source | Description |
|---|---|
| **Mercer**<br>Investing in a Time of Climate Change | Highlights the potential variability of climate change on returns across 14 asset classes and 14 industry sectors over a 35-year period. It concludes that median annual returns could vary from +3.5 percent (for renewables) to -4.9 percent (for coal) under different climate scenarios. |
| **Moody's Investors Service**<br>Environmental Risks Heat Map | Qualitatively scores 86 rated sectors globally for credit exposure to environmental risks in terms of both the materiality and timing of any likely credit effects. Scoring is based on five subcategories of environmental risk, of which one subcategory is carbon regulation. It identified 13 sectors with very high or high exposure to carbon regulations. |
| **S&P Global Ratings**<br>How Environmental and Climate Risks Factor Into Corporate Ratings | Identifies subsectors that are most exposed to environmental and climate-related risks and how ratings have been impacted over a two-year look back period by risk. Highlights nearly 300 cases where such risks affected the rating analysis and around 60 cases where rating revisions were made. |
| **Sustainability Accounting Standards Board**<br>Technical Bulletin #: TB001-101816 | Profiles climate-related risk across 79 industries related to physical effects, transition to a low-carbon economy, and climate-related regulation. It also considers revenue impacts, cost impacts, asset impacts, and financing impacts. It identifies 72 industries significantly affected by climate-related risk, although the risk manifests itself differently from one industry to the next. |
| **World Resources Institute (WRI) and United Nations Environment Program Finance Initiative (UNEP FI)**<br>Proposed Discussion Framework on Carbon Asset Risk | Explores sector-level exposure to three indicators of carbon risk (sector carbon intensity of sales, physical assets life span, and EBIT margin). The report identifies sectors with the highest potential exposure to a low-carbon transition. They include organizations with:<br>– fossil fuel assets such as coal and consumable fuels that have high carbon intensity per $ sales,<br>– fossil-fuel-dependent infrastructure such as utilities, pipelines, airports and railways that have high physical asset life spans,<br>– high-carbon assets facing a shift to low-carbon technologies (e.g., energy-using equipment in the transport sector), and<br>– high carbon assets without low-carbon competitors (e.g., for production of basic materials). |

ENT

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# TCFD PILLAR 2: STRATEGY

## b) Impact on organization:

Describe impact of those climate-related risks and opportunities on the **businesses**, **strategies** (e.g. products/services, supply chain, mitigation/adaptation) and **financial planning** (e.g. capital allocation, acquisition or divestment)

**Consider impact on their business and strategy in the following areas:**

- **Products and services**
- **Supply chain / value chain**
- **Adaptation and mitigation activities**
- **Investment in R&D**
- **Operations**

**Impact on financial planning:**

- **Operating costs and revenues**
- **CAPEX and capital allocation**
- **Acquisitions and divestments**
- **Operations**
- **Access to capital**



Source: TCFD

# TCFD PILLAR 2: STRATEGY

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Describe impact of those climate-related risks and opportunities on the **businesses**, **strategies** (e.g. products/services, supply chain, mitigation/adaptation) and **financial planning** (e.g. capital allocation, acquisition or divestment)

**Asset managers:**

- How the risks and opportunities are factored into relevant ***products or investment strategies***?
- How ***each product or investment strategy*** might be affected by the low carbon economy transition?

- Companies also disclosed more comprehensive information on the impact of climate-related issues on **their strategies** compared to the impact on their financial planning.
- For example, most companies disclosed information on **how they plan to address specific climate-related risks as well as current and planned actions to reduce GHG emissions**.
- Some companies disclosed information on **financial planning** focused on topics such as investments in research and development, acquisitions or divestments, and access to capital.
- While these disclosures generally became more quantitative over time, not many companies disclosed estimates on the actual or potential financial impact of climate-related risks and opportunities.



Source: TCFD and TCFD Status Report 2022

# POTENTIAL IMPACT BY FINANCIAL CATEGORIES

| Categories | Climate-related implications | Examples of financial impact | Examples of illustrative metrics |
|---|---|---|---|
| Revenue | - Changing market demand<br>+ New revenue stream | - Revenue from operational disruption<br>+ Increased revenue | Revenue/Energy/Emission by product line |
| Operational expenses | - Expenses to address climate-related risks and regulations<br>+ Decreased expenses due to increased resource efficiency | - Costs for R&D, output management (e.g. waste)<br>- Expenses to address physical risks (e.g. insurance) | Percentage of R&D expense for low carbon alternative or energy efficiencies |
| Capital expenditure | - Capital expenditure required to address climate-related risks | - CapEx for equipment's or technologies or physical risk mitigation<br>+/- investment affected by carbon pricing | Percentage of CapEx allocated to low-carbon assets |
| Non-current assets - PPE | +/- Change in value of assets due to climate risks and opportunities | - Write-off/early retirement of the assets<br>+/- value of assets based on carbon pricing | Value of assets located in high risk areas; Breakdown of assets by current or potential emission |
| Goodwill/Brand | +/- Change in organization's reputation | +/- Brand value<br>- Impact on workforce management | Market valuation, Relationships with stakeholders |
| Long-term financing | +/- Change in cost of debt | +/- amount of debt, credit rating, interest rates | Access to debt markets, creditworthiness |

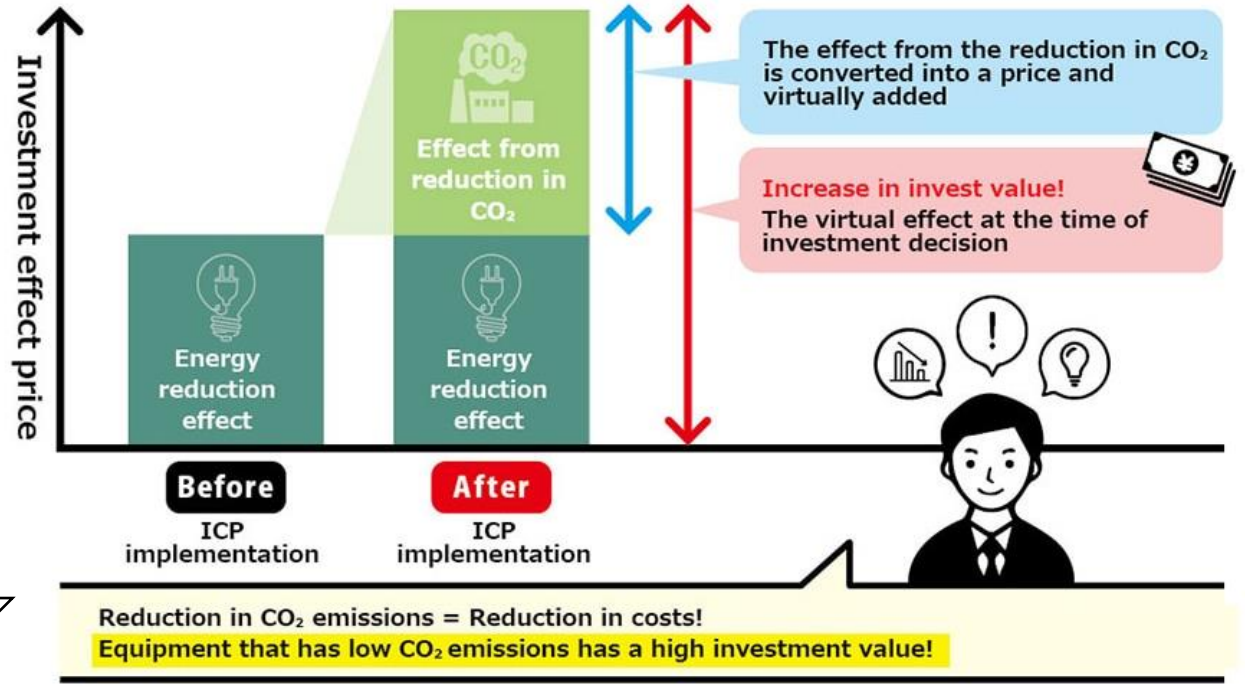
Source: TLCFD

# IMPACT ON FINANCIAL PLANNING

Introduced regulation

Carbon pricing

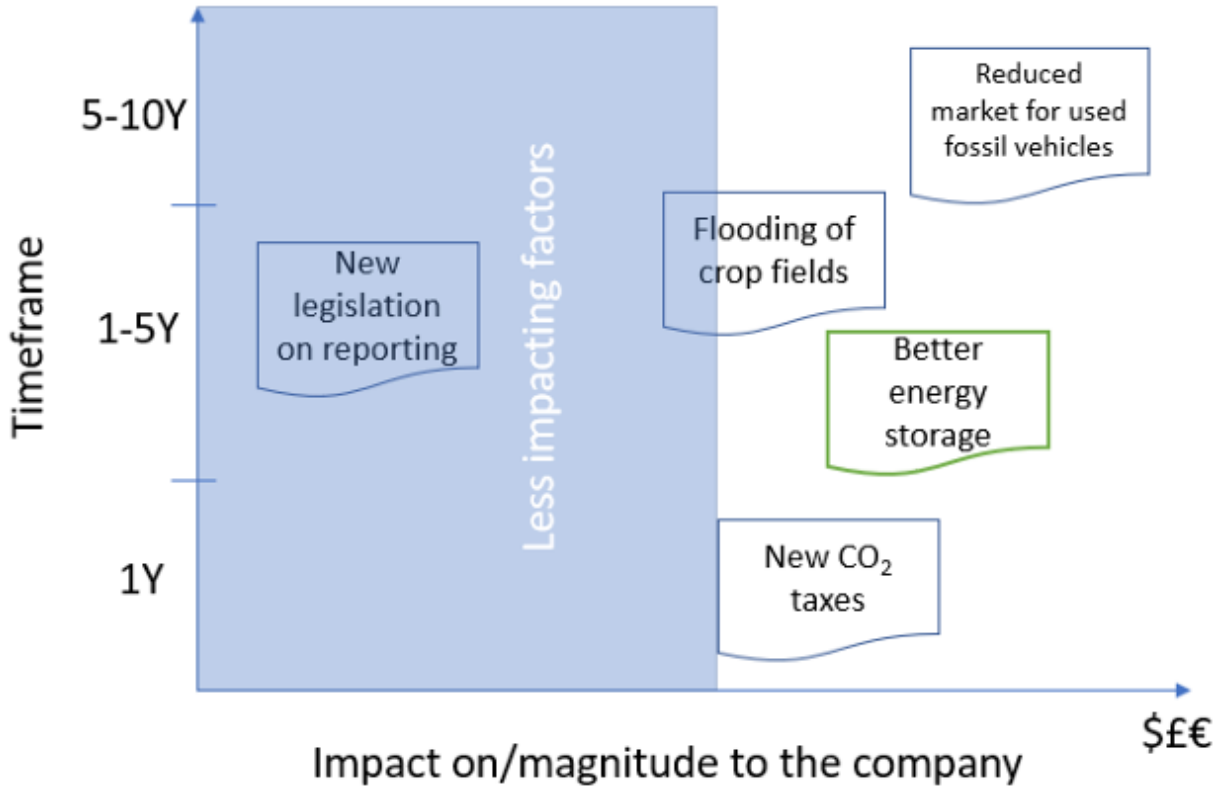
- Calculate carbon impact and set reduction targets
- Set carbon price
- Integrate into strategy and plan
- Invest in low-carbon technologies
- Monitor performance




https://social-innovation.hitachi/en/article/icp/

# VISUALIZING IMPACTS

Example: Risks and opportunities assessment of climate risk factors with a high likelihood defined by a 2 degree scenario




Source: CDSB

# INCREASE QUANTIFICATION OF IMPACT


| High-level description of qualitative impacts | Qualitative impacts by business line/asset | High-level quantification | Quantitative impacts by business line/asset |
|---|---|---|---|
| - Risk exposures<br>- Expected impact<br>- Management's actions to mitigate the risks | Assessment of risk exposure and materiality by climate risks across sectors/portfolios | Range of quantity of impacts and estimates at organizational level | Specific quantity or quantities (e.g. assumption of financial impacts) |

Source: TCFD Status Report 20221

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# TCFD PILLAR 2: STRATEGY

## c) Resilience of strategy:

Describe the resilience of the strategy, taking into account **different climate scenarios**, including **2 degree Celsius or lower**, and how **and whether the strategies will be changed** to address the risks and opportunities

**Current status:** The resilience of the company's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario, **tended to be limited to listing the scenarios that companies used to assess resilience**, with little to no mention of the results or their application.

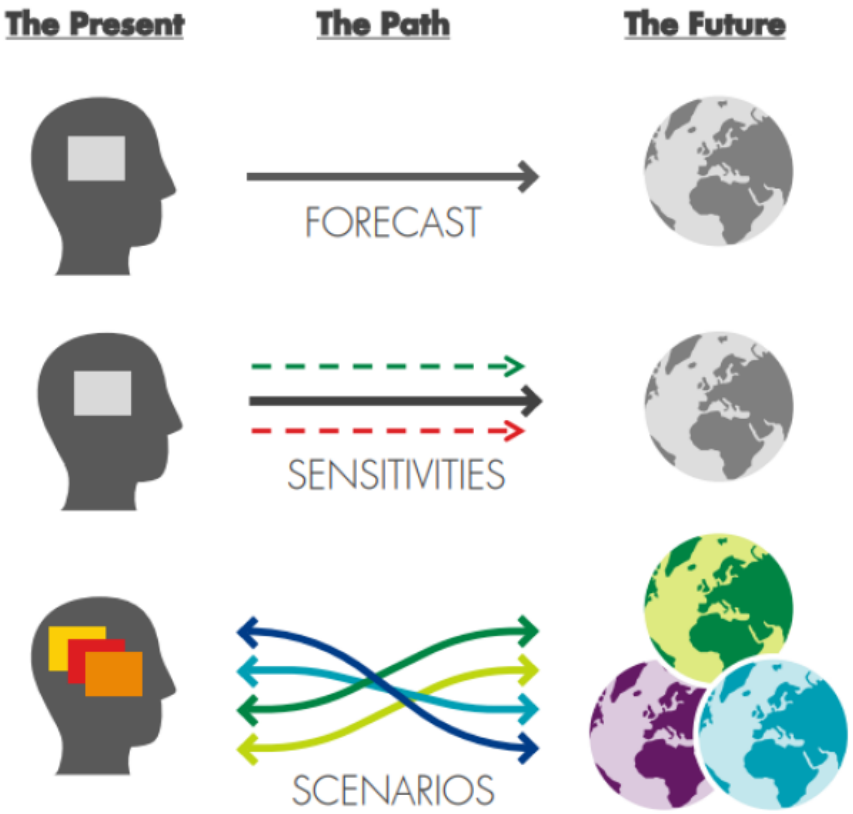
This is the most challenging task of the strategy pillar; however more companies are disclosing quantitative information related to climate scenario.

- For asset managers, disclosures on the resilience of **investment strategies** in relation to different climate change scenarios explain how investment strategies might change in response to climate-related risks and opportunities, as well as the potential impacts on financial performance and financial position.
- In line with TCFD recommendations, scenario analyses **should ideally repeat annually** with increasing coverage and complexity and assess risk and opportunities from a short, medium, and long-term horizon.



Source: TCFD and TCFD Status Report 2022

# CLIMATE SCENARIO

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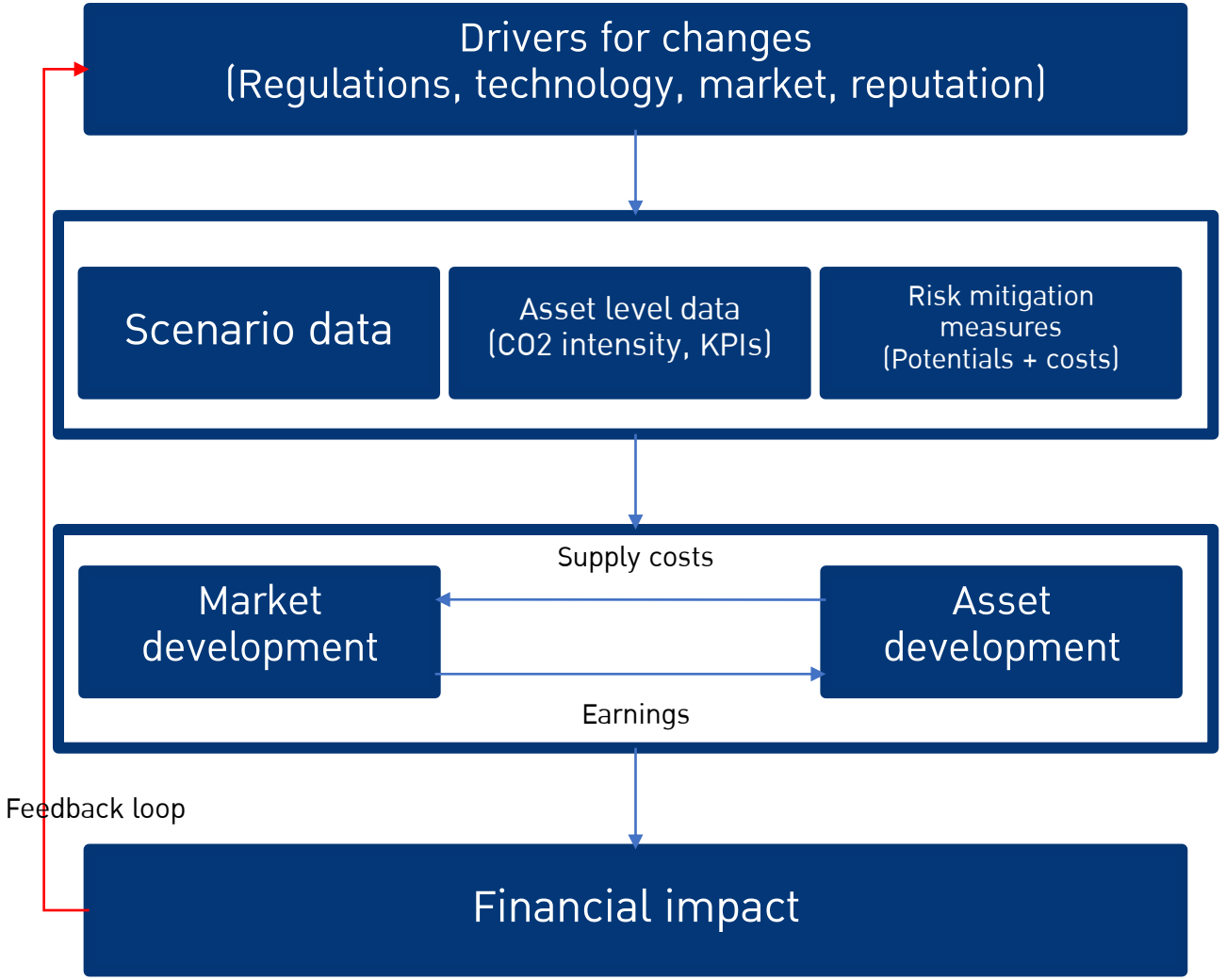



Source: The CO-firm

# CLIMATE SCENARIO

Scenario data

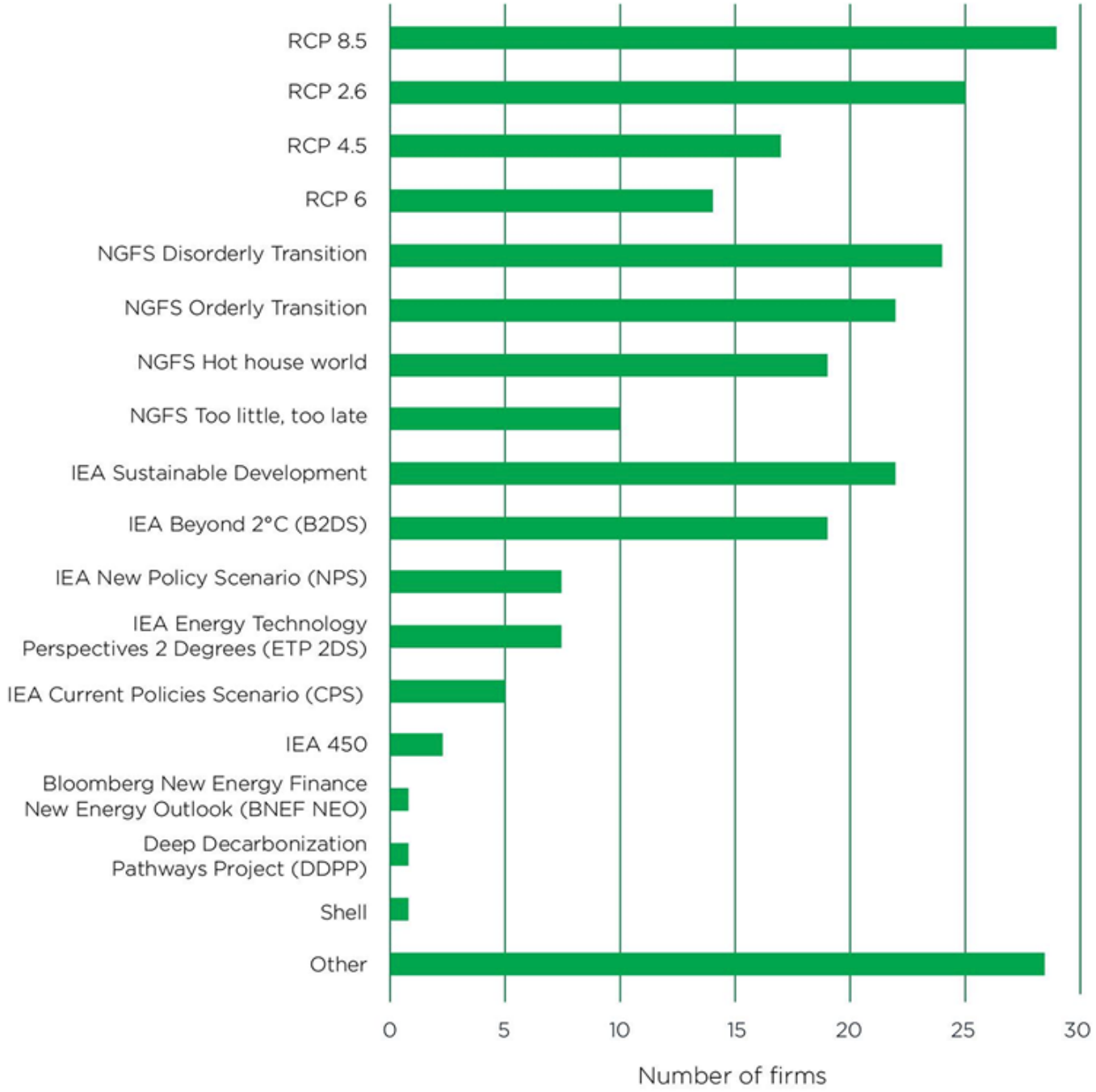
**Risks:** cover both types

**Assessment:** use plausible scenarios including below 2 degree Celsius and no-policy scenario

**Outcome granularity:** by sector, geography, etc.

**Selected scenario(s)**

| IPCC | IEA SDS | NGFS | Internal scenarios | Vendor scenarios |
|---|---|---|---|---|




**Third Annual Global Survey of Climate Risk Management at Financial Firms:**

Climate scenario used by financial firms



Source: Global Survey of Climate Risk Management at Financial Firms 2021

# CLIMATE SCENARIO

## Points to consider …

- **Scenarios used:** Firms chose scenarios for many reasons, but frequently because they covered both risks that could arise if the Paris Agreement objectives are met as well as if these objectives are not met. Popular reference scenarios were those published by the **IPCC**, **NGFS** and **IEA**.

- **Scope of analysis:** Firms often focus their attention on the **most material exposures** or those areas of the business that are expected to be the most impacted.

- **Outcomes:** Financial firms are using scenario analysis to **help evaluate and take action**, such as whether there should be changes in the firm's risk management, portfolio composition, disclosures, and organizational strategy.

- **Building capacity:** Many firms are **using external parties** to help them develop and build scenario analysis capability. Many firms use third party technology and/or data.



Source: Climate Financial Risk Forum Guide 2021

# CLIMATE SCENARIO

## For asset managers, the scenario(s) should inform the following:

### Areas for increased investment

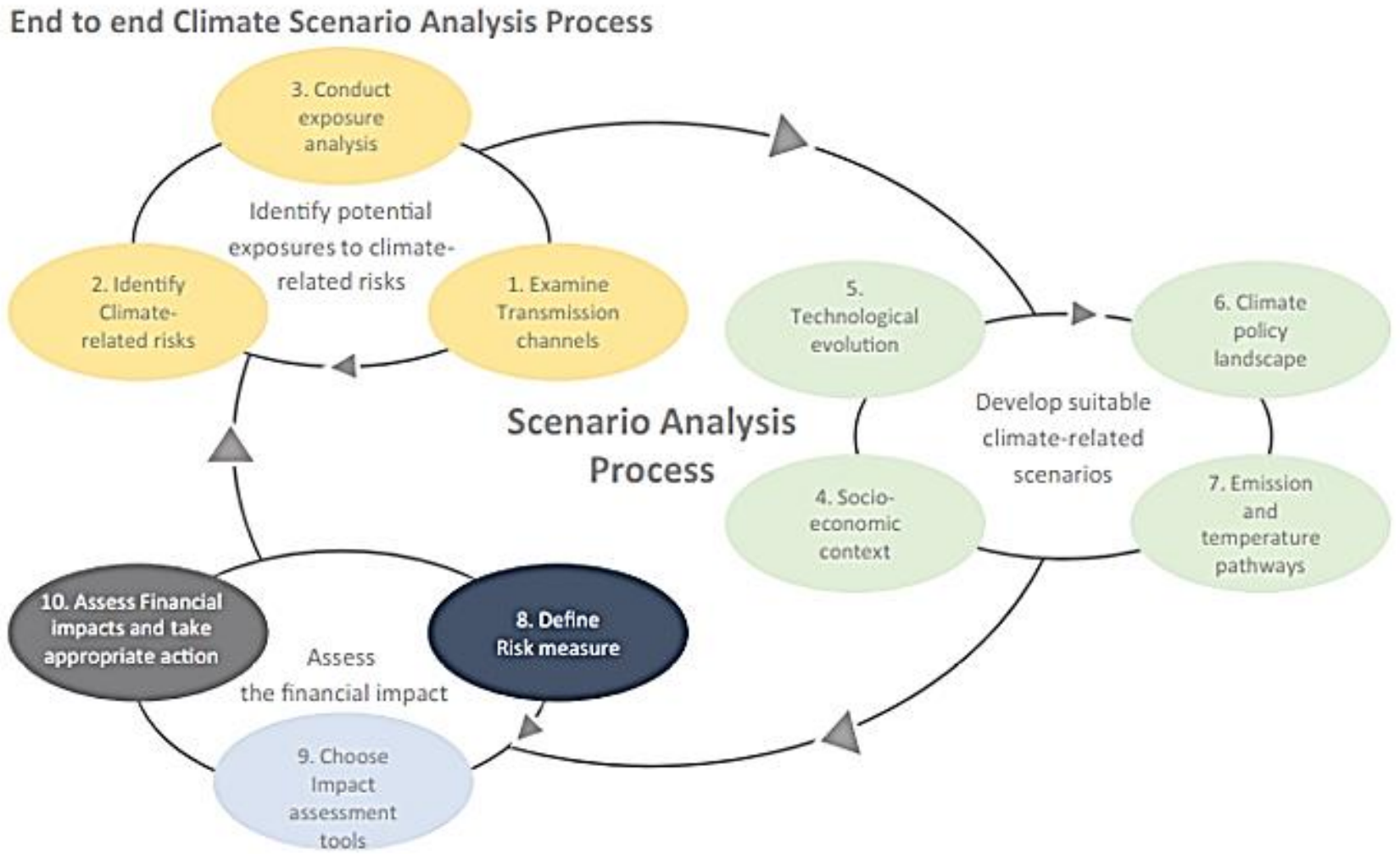
- Issuers focused on **climate solutions**, for example, renewable energy, green hydrogen, battery electric vehicles, carbon capture and storage (technologies and market set to grow in a Net Zero scenario).
- Issuers **with ambitious commitments** to reduce their carbon emissions across the value chain in line with the Paris Agreement.

### Areas for reduced investment

- Issuers **focused on fossil fuels and carbon intensive activities** (e.g. Transport, Buildings Materials, Industrials) with **no - or a lack of - ambition to change**.
- Issuers the **most vulnerable to transition risks** given their geographical and business mix (including jurisdictions most exposed to carbon policy risks and technologies the most pressured by the transition, for example, internal combustion engines in the automobile sector).

# CLIMATE SCENARIO

**Iterative process …**




Source: Climate Financial Risk Forum Guide 2021

# CLIMATE SCENARIO: LEARNING FROM FTSE350 COMPANIES

- ***Reporting Analysis:***

*Thematic coding of all FTSE 350 annual reports*

- ***Exploratory Survey:***

*Validated responses from 20 FTSE 350 companies*

- ***Deep Dive Interviews:***

*44 interviewees across 16 companies*

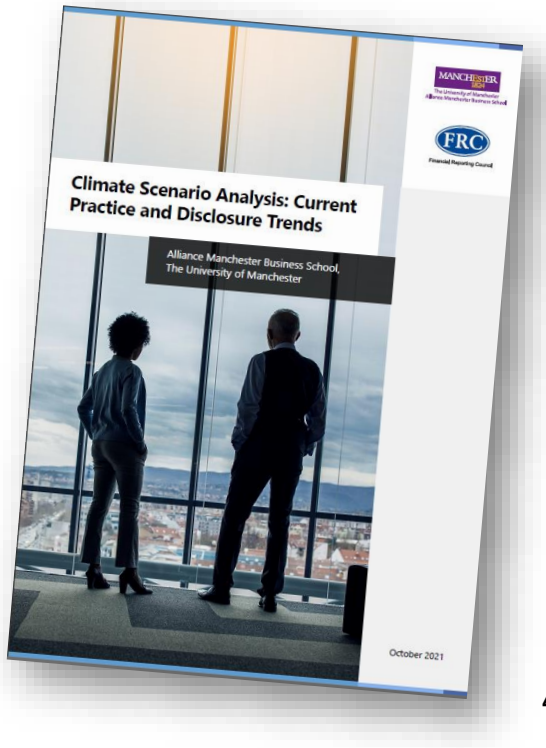
# CLIMATE SCENARIO

**Looking at direction of changes at first, then refine the model when more data is incorporated or available**

'With climate change, because we're looking over 30 years, the accuracy of modelling isn't two decimal places. It's more about which sectors are going up and when is it going down and so forth. So, it's the direction of change and the trend rather than specific numbers.'
*Interview with financial services company*

Similarly, interviewees highlighted the problem of accessing data when engaging with their supply chain. However, this was typically seen as an ongoing process through which they will improve data availability and their ability to collaborate with external parties.

Several interviewees also aimed to start modelling the confluence of several impacts in order to stress-test their business model. However the complexity of modelling simultaneous impacts presented a key obstacle to a quantitative approach. One company instead created a narrative for an event with simultaneous physical impacts from flooding and heatwaves, using this a basis for discussion among workshop participants.



# CLIMATE SCENARIO

**Using regional level data to identify sites at risks; then the flood maps and local knowledge are used to analyze sites on a case-by-case basis**

The granularity (or resolution) of data was commonly noted as a challenge. For example, it was difficult to model physical impacts at the level of an individual building or site. To overcome this challenge, one consumer discretionary company's property team used physical impact data at a regional level to identify sites and buildings that may be at risk, which were subsequently analysed on a case-by-case basis using flood maps and local knowledge.

'We don't just say, "It's a location next to a river". You ask, "Which side of the river?" because one side of the river is flood plain, one side is eight metres higher and, to be honest, will never flood. You know, you look at it on a map.' *Interview with consumer discretionary company*

# GETTING STARTED WITH TCFD CLIMATE SCENARIO: FOUR BEST PRACTICE RECOMMENDATIONS

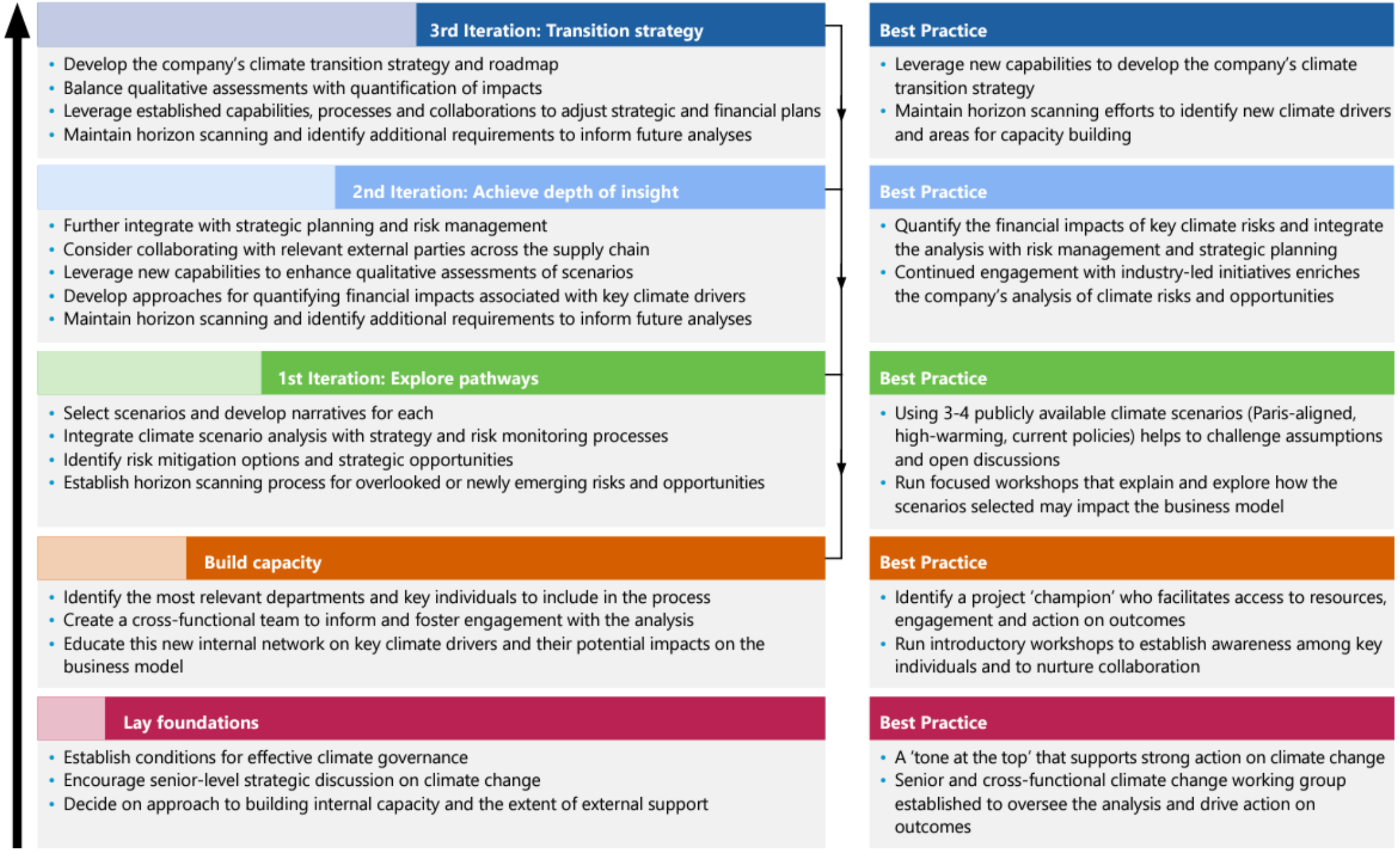
1. Establishing a **climate change working group** creates the conditions for effective climate

2. The outcomes of climate scenario analysis are used to **shape future iterations**

3. Best practice is increasingly **sector-specific**. The team leading the climate scenario analysis should be active in industry-led debates

4. Using climate scenario analysis to **develop climate transition strategy** as well as to **manage climate risk**

Source: https://www.frc.org.uk/getattachment/0d28d5e8-ff89-4028-88a8-49e837db6022/FRC-Climate-Scenario-Analysis-in-Corporate-Reporting_October-2021.pdf






Source: https://www.frc.org.uk/getattachment/0d28d5e8-ff89-4028-88a8-49e837db6022/FRC-Climate-Scenario-Analysis-in-Corporate-Reporting_October-2021.pdf

# SESSION 2 CONTENT

- Background and recap
- TCFD Pillar 2: Strategy
- A) Risks and opportunities
  - TCFD's classification of risks
- B) Impact assessment
- C) Strategy resilience
  - Scenario analysis
- Case studies
- Discussion points
- Q&A

# CASE STUDY


# TCFD: STRATEGY
# EXAMPLE – ABRDN TCFD REPORT 2021

Summary of each element in TCFD recommendation Pillar 2 Strategy


## Climate-related risks and opportunities

The most material climate risks we have identified include regulatory reporting obligations, changes in client demand we cannot meet at the required pace and climate change impacts on markets and asset values. Assessing the risks and opportunities related to climate change across regions and sectors is also a core part of our investment process and includes policy, technology and market as well as physical climate risks.

More from page 20

## Impact of climate-related risks and opportunities

Our material risks and opportunities are linked to our growth strategy, such as the opportunity for increased revenue through increased demand for lower emissions products and services. We also quantify the impact on assets we invest in through our thought leading climate scenario analysis.

More from page 20

## Resilience of our strategy against climate scenarios

We conducted our unique, industry leading climate-related scenario analysis exercise in 2020 and updated this in 2021 to assess the financial impact of climate change on asset values. This deepened our understanding of the potential implications of climate-related transition and physical risks and opportunities for investments and the resilience of our portfolios and investment strategies. While in the aggregate impacts can be small, there is considerable dispersion across and within sectors which helps to identify winners and losers.

More from page 23



Source: abrdn TCFD Report 2021

# TCFD: STRATEGY
# EXAMPLE – ABRDN TCFD REPORT 2021

Tables 1 and 2 highlight our most material risks and opportunities resulting from our climate risk assessment. We assess financial impacts on a scale of 1–4. All material risks and opportunities have a 61–100% chance of occurrence in the next 12 months (i.e. are a 1 in 1 year event).

One of the most material transition risks for abrdn relates to the enhanced reporting regulations and the cost of analysing and gathering climate-related data across all our asset classes, which is complex and resource intensive. Climate-related market impacts on asset values is another important risk which we carefully analyse through our climate scenario analysis. Thirdly, there is a risk related to changes in client preferences and demand for climate-related products and reduced revenue if we are not prepared for this shift – this also provides the greatest opportunity for us and is a key driver for the development of our net zero directed solutions.

Disclose the identification process

Time frame

Identified most material climate-related risks:
- reporting regulation
- market impacts on asset value
- change in client preference

Identified most material climate-related opportunities:
- Response for clients' demand on climate-related products

Source: abrdn TCFD Report 2021

# TCFD: STRATEGY EXAMPLE – ABRDN TCFD REPORT 2021

- Linking identified risks and opportunities with financial impacts
- Describing mitigation strategy

**Table 1: Key climate-related risks**

| | | Risk type | Potential financial impact (-) | Mitigation strategy | Financial impact post control (-) | Strategic priority |
|---|---|---|---|---|---|---|
| Transitional | Policy and legal | Enhanced reporting regulations | Cost of analysis, data gathering and publication: 4 | – Process to identify and respond to regulatory and voluntary change<br>– We have data and tools necessary for analysis and research<br>– Carbon footprinting is available for all funds<br>– Our platform embeds scenario analysis outcomes<br>– Client reporting is being further automated | 3 | Technology<br>Solutions<br>Investing responsibly<br>Client ecosystems |
| | Market | Significant shifts on consumer preferences | Reduced revenue from decreased demand for products: 3 | – Enhanced communication of our ESG credentials<br>– Distribution teams ensure we understand clients' needs<br>– Our in house ESG score integrates ESG criteria into our funds<br>– We are developing products to meet the growing demand for low-carbon solutions | 2 | UK adviser and consumer market<br>Growth in Asia<br>Technology<br>Solutions<br>Investing responsibly<br>Client ecosystems |
| | | Climate-related risks impact the market | Abrupt and unexpected market impacts reduce the value of AUM, impacting clients and reducing investment management revenue: 4 | We protect our clients' investments from negative climate-related impacts by:<br>– Diversified portfolios<br>– Embedded scenario analysis into our investment process<br>– Embedded carbon footprinting engagement<br>– Thematic notes disseminated across all investment<br>– ESG House Score in our fund analysis<br>– Research led thematic notes for investment desks | 1 | Private markets<br>Investing responsibly<br>Client ecosystems |
| | Reputational | Increased stakeholder concern or negative stakeholder feedback | Reduced revenue from decreased demand for products: 3 | – We aim to exceed stakeholder expectations on reporting, transparency and action<br>– We support transitional policies and proactively engage with governments, regulators and industry organisations<br>– We are an active investor<br>– We integrate ESG criteria into all of our funds | 2 | Investing responsibly |
| Physical | Acute | Increased severity of extreme weather events | Reduced revenue due to transport difficulties, damage to facilities: 3 | – We have an established business continuity process<br>– We provide flexible working for colleagues<br>– Insurance is in place for travel and buildings | 2 | |

Source: abrdn TCFD Report 2021

# TCFD: STRATEGY EXAMPLE – ABRDN TCFD REPORT 2021

- Linking identified risks and opportunities with financial impacts
- Describing strategy to response to the opportunities

**Table 2: Key climate-related opportunities**

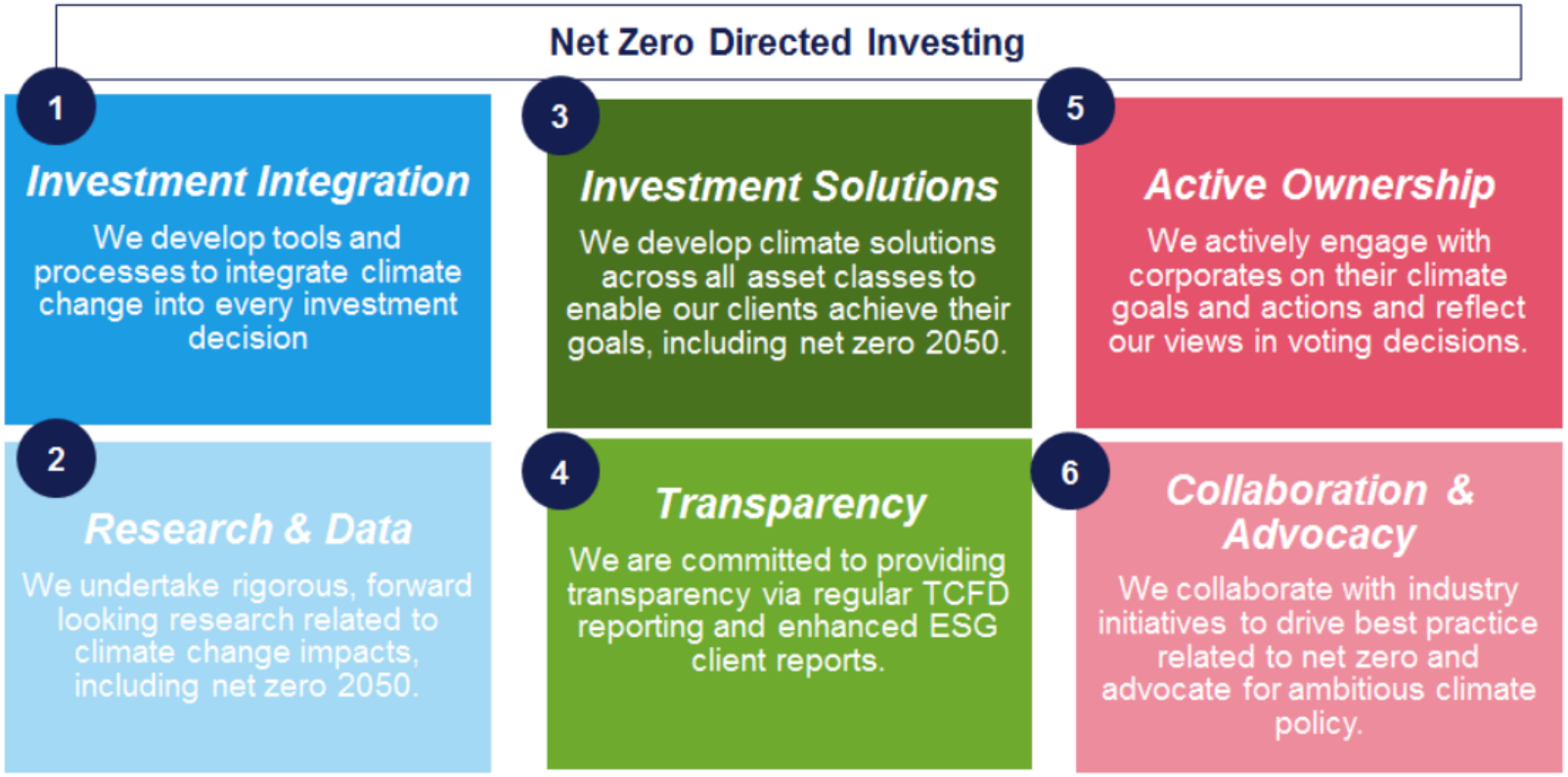
| | | Opportunity type | Potential financial impact (-) | Mitigation strategy | Financial opportunity post control (-) | Strategic priority |
|---|---|---|---|---|---|---|
| Transitional | Products and services | Development and/ or expansion of low emission goods and services | Increased revenue through demand for lower emission products and services: 4 | – We have and are further developing low-carbon and net zero focussed products<br>– We identify the climate transition leaders<br>– We have a climate toolkit<br>– Developing easier access to ESG products on our platforms | 3 | UK adviser and consumer market<br><br>Technology<br><br>Solutions<br><br>Investing responsibly<br><br>Client ecosystems |
| | Resource efficiency | Move to more efficient buildings | Reduced operational costs, better working environment: 3 | – A building strategy linked to sustainability targets including energy efficiency<br>– Efficiency projects in place | 3 | |
| | | Use of more efficient modes of transport | Reduced operating costs, increased productivity, resulting in revenue, workforce and reputation benefits: 3 | – Increasing videoconferencing online meetings<br>– We are moving towards electric/ hybrid cars<br>– Travel reduction targets and strategy are in place | 3 | |

Source: abrdn TCFD Report 2021

# ABRDN'S STRATEGY: NET ZERO DIRECTED INVESTING

## Implementing NZDI in practice

To put our NZDI strategy into practice, we focus on six areas:




Source: abrdn website

# TCFD: STRATEGY EXAMPLE – ABRDN TCFD REPORT 2021

Investment management is included in the NZDI.

Actions include:

- sector-specific research
- ESG scoring
- Including ESG/Carbon information in the investment decision
- Developing low-carbon products

**Table 3: Our climate change strategy: Net Zero Directed Investing**

| Investor agenda category | Focus area | Objective | Action |
|---|---|---|---|
| Investments | Research and data | Provide high-quality climate change insights and thematic research across asset classes and regions | – abrdn Research Institute thought leadership eg climate scenario analysis white paper<br>– Thematic research (climate policy, fossil fuels, sectors)<br>– Carbon footprinting and transition analysis |
| | Investment integration | Integrate the potential impacts of climate-related risks and opportunities into our investment decisions | – ESG scorecard with climate change<br>– ESG considerations is part of our research note template for fund managers<br>– Carbon footprinting as core data to consider for our funds |
| | Investment solutions | Understand client needs regarding climate change and low-carbon product demand. Develop innovative solutions and products | – Bespoke product solutions for climate change focussed investors<br>– Net zero 2050 aligned solutions<br>– ESG integration as standard across all our products |
| Corporate engagement | Active ownership | Understand investee exposure and management of climate change risks and opportunities. Influence investee companies via engagement and voting | – Regular engagement with companies on climate change<br>– CA100+ collaborative engagement initiative to influence<br>– We voted in favour of 55% of climate-related resolutions in 2021, and incorporated a voting policy against TPI laggards (those scoring 1 or below) |
| Policy and advocacy | Collaboration and influence | Collaborate with industry associations and participate in relevant initiatives. Engage with peers and policy makers to drive change and best practice | – Members of Net Zero Asset Management (NZAM), Principles of Responsible Investment (PRI), Institutional Investors Group on Climate Change (IIGCC), Climate Financial Risk Forum (PRA/FCA led), CA100+, Powering Past Coal Alliance (PPCA), Transition Pathway Initiative (TPI), Farm Animal Investment Risk and Return (FAIRR)<br>– Providing our views on climate matters to Governments |
| Investment disclosure | Transparency | Disclose using the TCFD reporting framework, including additional disclosure for asset managers | – The publication of this report<br>– Encouraging disclosure of the TCFD framework in engagements<br>– Transparency via recently launched ESG client reports |

Source: abrdn website

# TCFD: STRATEGY EXAMPLE – ABRDN TCFD REPORT 2021

## Stress testing

The transition to a lower-carbon global economy is likely to have significant impacts on global financial markets and client demands for our products. These variables were both explored as part of our corporate stress testing and scenario analysis programme.

As part of our most recent exercise we explored a range of severe stresses that included shocks to financial markets (with equity markets falling around 30% from year-end levels) and net outflows (leading to assets under management and administration (AUMA) falling up to 15% over the scenario horizon). The Group had sufficient capital and liquid resources to withstand all of the stresses that were explored and did not need to take any management actions other than those assumed within the business plan.

## Climate scenario analysis

The transition and physical risks of climate change are wide reaching and impact every country, sector and company. Through climate scenario analysis, we wanted to develop a robust, forward looking, quantitative assessment of the possible implications of these risks and opportunities on our investments. We have developed a bespoke approach to climate scenario analysis, that integrates and quantifies the macro and micro drivers of climate impacts on asset prices within a probabilistic framework.

### What we did

Our 2021 climate scenario analysis update took place against a very different economic and policy backdrop to our initial 2020 analysis. Our bespoke approach has enabled the update to take into account: the long-term alterations to economic outlook in many countries due to the COVID-19 pandemic and the consequential changes to projected energy demand; the rapid gain of market share by renewable technologies; and the changing ambition and credibility of policy commitments.

Our latest analysis includes 17 scenarios in total with projected 2100 temperature rises ranging from 1.4 to 3.1°C. Our approach brings together eight industry standard off-the-shelf scenarios built by the Network for the Greening of the Financial System (NGFS) alongside seven more nuanced and plausible bespoke scenarios. We also include two probability-weighted scenarios, one of which captures the mean across the full range and another that captures the mean across only the Paris-aligned scenarios.

Our off-the-shelf scenarios are now based on those built by the Network for the Greening of the Financial System (NGFS) which have become the standard used by regulators to assess climate risk exposures for regulated financial entities. Using them as the base scenarios for our bespoke framework facilitates comparability and better meets the needs of our clients.

Our mean scenario now sees greater emissions reductions than in our 2020 exercise. And though we do not yet think that the outlook for global climate policies and technology pathways is consistent with the objectives of the Paris Agreement, we have increased the probability attached to stronger action and Paris-aligned scenarios.

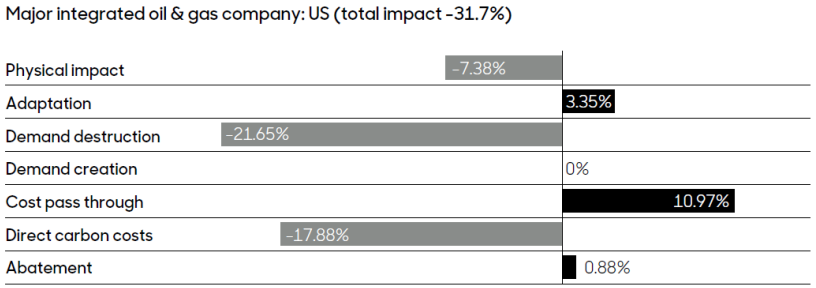
- Using 8 industry standards off-the-shelf scenarios
- Using that of NGFS as base

**By capturing more plausible central scenarios, and assigning realistic probability weights, we are in a much stronger position to integrate scenarios into our investment decision making and climate solutions for clients.**

**Jeremy Lawson**
Chief Economist

Source: abrdn TCFD Report 2021

# TCFD: STRATEGY EXAMPLE – ABRDN TCFD REPORT 2021




## How we are using this information

At individual company level, we are able to break the total impact down into its main drivers providing us with a clear way to assess the impairments or uplifts via the scenario analysis at asset level.

The insights from our analysis are now being embedded throughout the business and we are integrating our climate scenario framework and insights into our business strategy, the key stages of our investment process and the development of climate-driven solutions to deliver superior outcomes for our clients

**Stock-level research**

Identify risks and opportunities based on impact variation within sectors and regions and understand characteristics of winners and losers

**Corporate engagement**

Incorporate insights into engagement to understand risk mitigation and resilience, challenge strategies and encourage disclosure

**Strategic Asset Allocation (SAA)**

Reflect implications of climate scenarios on aggregate risk and return opportunities

**Investment solutions**

Construct climate-resilient portfolios and client-driven products and benchmarks to support the low-carbon transition



Source: abrdn TCFD Report 2021

# TCFD: STRATEGY EXAMPLE – ABRDN TCFD REPORT 2021

## Assessment of fund and portfolio resilience

We can use the scenario analysis to understand how resilient our portfolios are to different, uncertain future pathways. Our Power BI tool enables every fund manager to understand the resilience of their portfolio to different scenarios and against the benchmark.

### At fund level

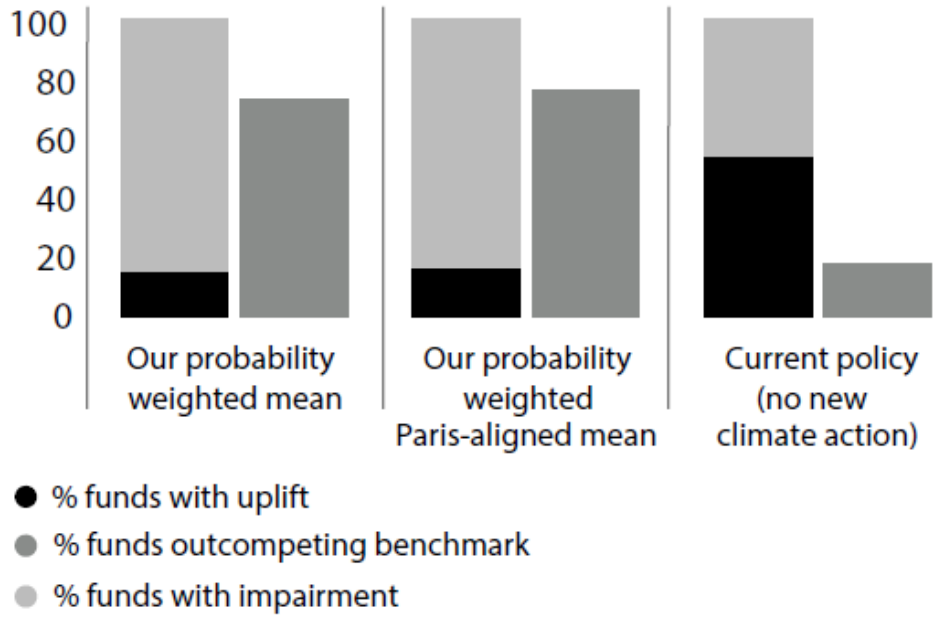
We can use the results to test the valuation impact on individual funds under the different scenarios. Our Multi-Asset Climate Solutions fund, for example, comprises companies that derive over 40% of their revenues from climate solutions. For this fund we saw that for most scenarios and in our scenario mean, the valuation implication was strongly positive.

### At aggregate level

The results can be used to examine the resilience to different scenarios across our range of products. The marked downward shift in valuation estimates we have seen across the MSCI global and regional indices is reflected in the increase in the number of funds that have a projected impairment in their aggregate valuation.

However, the chart below shows that under our mean scenario as well as our Paris-aligned mean approximately three-quarters of equity portfolios outcompete their benchmarks.

Equity




Source: abrdn TCFD Report 2021

# TCFD: STRATEGY EXAMPLE – ABRDN TCFD REPORT 2021

Alignment of the investment with EU taxonomy standard

Case Study

## Multi-Asset Climate Opportunities fund

The climate transition is gaining pace and is starting to transform key sectors of the economy, like electricity generation and road transport. This is a large opportunity for investors willing to put their capital to work financing the companies that are driving this transition. abrdn has created a fund (Multi-Asset Climate Opportunities (MACO)) that enables clients to direct their capital to companies whose products and services drive the transition to a sustainable, low-carbon economy.

The fund is multi-asset, which allows stronger diversification and more powerful risk management. It combines allocations to equities, listed infrastructure and bonds.

- c. 55% equities – renewable energy generators, turbine and solar panel manufacturers, electric vehicles, batteries, energy efficiency, pollution control and sustainable water.
- c. 15% listed infrastructure – operational wind farms, solar parks, battery storage and energy efficiency.
- c. 30% bonds – bonds issued by companies with green products (as above), as well as 'green bonds' issued by standard companies, but where the proceeds from the bond are ringfenced for exclusive use to finance green projects.

Our green bond allocation has a special focus on emerging markets. Enabling these countries to transition to a low-carbon future is a key priority for global Paris-aligned capital flows. The fund aims to score very highly on the new EU Taxonomy for Sustainable Activities.
The Taxonomy is a new objective standard for sustainable activities, developed by the EU to tackle 'greenwashing' (calling a fund 'sustainable' but investing in the same old standard companies). MACO expects the vast majority of its holdings will be aligned with the Taxonomy standard.

**Multi-Asset Climate Opportunities**
**Target asset allocation, January 2022**

Green equity
Renewable infrastructure
DM green bonds
EM green bonds

# CASE STUDY

Task Force on Climate-Related Financial Disclosure

## J.P. Morgan Asset Management
## 2022 Inaugural Report

J.P.Morgan
ASSET MANAGEMENT

# TCFD: STRATEGY
# EXAMPLE – JP MORGAN TCFD REPORT 2022

TDRI THAILAND DEVELOPMENT RESEARCH INSTITUTE

## Strategy

**Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.**

Transition risks and opportunities (Policy and Legal, Reputation, Market and Consumer Preferences, Energy and Technology Transformations) are particularly important in the near term (3 to 10 years), while physical risks (acute and chronic) are increasingly important over longer time horizons (up to 30 years), although these will vary by asset class and risk type.

**Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.**

A preliminary assessment of a subset of our equities portfolios found the highest risk exposure within the Extractive Minerals sector. Transition risks from Policy and Legal impacts were highest, while most transition related opportunities were from shifts in Market and Consumer preferences.

**Describe how climate-related risks and opportunities are factored into relevant products or investment strategies.***

**Describe how each product or investment strategy might be affected by the transition to a low-carbon economy.***

ESG integration in our actively managed investment processes considers financially material ESG factors, including climate-related risks and opportunities. Our broad product capabilities and global research allow us to partner with clients to meet their needs across a spectrum of solutions, including strategies that incorporate risks and opportunities of climate change.

**Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or ower scenario.**

We are in the process of developing our firmwide approach to scenario modeling, formalizing the work that is currently being done by a number of investment teams. The approach will assess the resilience of our assets under management to different futures, including achieving net zero by 2050.

## Overview of the climate-related strategy

Exhibit VII. Our climate-related strategy is built around several key components

**ESG integration efforts that include:**
- ESG integration process for all asset classes
- Dedicated climate-focused resources
- Identifying climate risks across time horizons
- Fo cusing on transition risks and opportunities
- Scenario modeling and portfolio resilience

**Growing our sustainable product suite via:**
- Climate-focused investment strategies
- Low-carbon transition framework
- Acquisitions and strategic investments

**Investment stewardship activities, such as engagement and proxy voting**

**Participation in industry associations and advocacy groups**

Source: JP Morgan TCFD Report 2022

# TCFD: STRATEGY
# EXAMPLE – JP MORGAN TCFD REPORT 2022

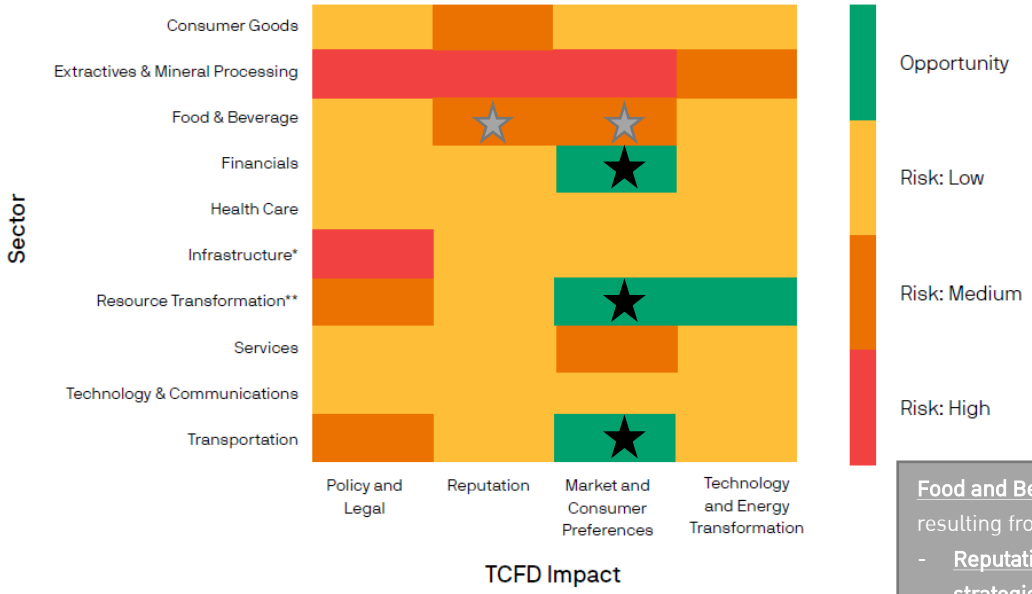
TDRI THAILAND DEVELOPMENT RESEARCH INSTITUTE

| Impact channel | Risk examples | Opportunity examples |
|---|---|---|
| Policy and legal | Expected impact of carbon pricing could result in high fixed operating costs and could result in decreased profits for companies with high emissions | Governments may provide incentives and subsidies to encourage a certain transition path |
| | Increased climate-related disclosures are expected, resulting in increased operating costs | |
| | Companies with historically high emissions or poor climate performance may be more exposed to future litigation, as well as fines, due to increased climate related regulation | |
| Reputation | Negative media or stakeholder perceptions or climate-related controversies could result in a loss of reputation, impact future financial performance and loss of future earnings | Being an early mover on climate issues may improve reputation, resulting in improved financial performance |
| Market and consumer preferences | Companies may be exposed to potentially declining demand for its products of services as consumers increasingly consider environmental impacts, resulting in loss of revenue | Companies offering low-emissions/ low-carbon products may benefit from increased revenues in response to changing consumer preferences |
| Technology and energy transformation | Costs associated with the transformation of existing technology may be high | Companies offering low-carbon/zero-carbon energy are expected to benefit from increased revenues and profits due to the global energy transformation |
| | Breakthroughs in new technology, such as renewables or battery storage, may drive a transition away from carbon intensive goods and services and/or persistent changes in fossil fuel prices | Companies involved in breakthroughs in new technology, such as renewables or battery storage, may benefit from increased revenues as demand for these products increases and/or costs decrease |
| | Stranded assets | |

Source: JP Morgan TCFD Report 2022

## Identified material transition risks and opportunities and impacts (by type and sector)

Exhibit XI. Climate-related transition risks and opportunities for a subset of our equities portfolio




*Infrastructure includes Utilities, Infrastructure, Real Estate and Waste Management

**Resource Transformation includes Industrials and Chemicals

Food and Beverage sector has medium risk resulting from impacts related to

- Reputation and Market from sector's lack of strategies and targets to reduce emissions
- Consumer Preferences from the negative impact on profitability resulting from changing consumer demand.

Transport, Resource Transformation and Financial Services, are poised to benefit from the transition to a low-carbon economy through changes to Market and Consumer Preferences. These opportunities primarily stem from the consideration of sustainability in products and services that are currently offered or in early development stages.

# TCFD: STRATEGY
# EXAMPLE – JP MORGAN TCFD REPORT 2022

## Product labelling strategy

Exhibit XII. J.P. Morgan Asset Management's range of sustainable products

**Exclusions**

The exclusion from a fund or portfolio of certain sectors, companies or practices based on specific ESG criteria and/or minimum standards of business practice based on international norms

**ESG Promote**

A defined percentage of the portfolio is invested in positive ESG issuers / companies.

**Sustainable**

**Positive Tilt**

An investment style that seeks to meet its objective by maintaining a portfolio that has a measurable tilt towards companies / issuers with positive ESG characteristics vs benchmark.

**Best-in-Class**

Strategy which invests in a defined percentage of companies / issuers that lead in their peer groups in respect of sustainability performance

**Thematic**

Strategy invested in well-defined themes or assets specifically related to sustainability. Often seeking an environmental or social outcome.

**Impact**

Targeted investments aimed at solving social or environmental problems as well as generating financial return

### *Exclusions on companies*

Although we do not apply blanket exclusions to our ESG-integrated strategies, our dedicated sustainable strategies, including those with climate-related objectives, apply values-based exclusions to respond to clients who prefer to further mitigate exposure to transitional risk or avoid adverse impacts to the environment. We implement these preferences by applying maximum percentage thresholds on revenue or production on certain business activities. For example:

Some Positive Tilt and Best-in-Class funds at a minimum apply the below values-based exclusions:

| | Positive Tilt | Best-in-Class |
|---|---|---|
| Unconventional oil & gas extraction[9] | 30% of revenue | 10% of revenue |

Certain products and strategies apply a consistent exclusionary screen on thermal coal, with a 30% threshold (turnover from production and/or distribution)

### *Tilting portfolios based on climate-related metrics*

We have built investable solutions on climate change by tilting portfolios based on measurable climate metrics and transition readiness. In order to do so, we leverage our expertise in data science, fundamental research and sustainable investing insights. For example, we have an active thematic strategy that combines expertise in AI and data science with fundamental and sector-specific human insight to identify companies that are developing innovative solutions to address the global challenge of climate change. The strategy leverages our machine learning capabilities that enable the investment team to assess almost 13,000 companies globally on exposure to a specific theme. Based on these results, the investment team conducts active fundamental research and engages with companies to gain a fuller picture, drawing on the insight of our experienced in-house research analysts and the stewardship expertise of the Sustainable Investing team. The process results in unconstrained, high-conviction thematic portfolios of companies sized based on alignment to the theme and related sub-themes.

Source: JP Morgan TCFD Report 2022

# TCFD: STRATEGY
# EXAMPLE – JP MORGAN TCFD REPORT 2022

## Thematic investment strategy

**Exhibit XIII. Case study of sustainable investment approach focusing on climate change**

One of our sustainable thematic strategies seeks to invest in companies that J.P. Morgan Asset Management believes are providing the products and services to address climate change and are well positioned to benefit from growing demand for such solutions.

The strategy invests in companies across five main sub-themes:

| Renewables & Electrification | Sustainable Construction | Sustainable Transport | Sustainable Food & Water | Recycling & Re-Use |
|---|---|---|---|---|
| Companies developing clean energy such as wind, solar, or hydro across the full production chain, and enabling electrification across the economy | Companies developing less carbon-intense forms of construction, including energy efficiency of buildings | Companies investing in sustainable forms of transportation across automobiles, trains and planes | Companies investing in less carbon-intense forms of agriculture, sustainable food, or clean water | Companies developing technologies to reduce waste, including equipment and materials recycling |

Source: JP Morgan TCFD Report 2022

# TCFD: STRATEGY
# EXAMPLE – JP MORGAN TCFD REPORT 2022

The framework developed by the Sustainable Investing Team and Quantitative Solutions team. The framework will be used to **identify companies that are well prepared** and well positioned to benefit from this transition.

The quantitative framework leverages **data sourced directly from companies**, **insights from third parties** and data from our **quantitative research and artificial intelligence team**. It is highly scalable and can be applied across asset classes.

There are **three key ways** that companies can prepare themselves for the transition to a low-carbon world, which covers both transitional and physical risk of climate change:
*1) managing emissions;*
*2) managing resources, such as electricity, waste and water;*
*3) Managing climate-related risks, both physical and reputational.*

The **framework's ratings** will then determine which companies are emphasized, through underweight and overweight positions, without taking sector bets.

Exhibit XIV. Three key ways companies can prepare for transition to low-carbon world

| Managing Emissions | Managing Resources | Managing Climate-Related Risks |
|---|---|---|
| **Site Emissions**<br>Reduce direct emissions and shift towards greener forms of energy | **Electricity Management**<br>Reduce indirect GHG emissions from the usage of electricity | **Physical Risk**<br>Mitigate impact of physical risks from extreme weather conditions |
| **Consumer Emissions & Opportunities**<br>Benefit from a shift in consumer demands towards low carbon alternatives | **Water Management**<br>Improve the sustainability of water flow management | **Reputational Risk**<br>Improve climate stewardship |
| | **Waste Management**<br>Reduce waste materials, both hazardous and non-hazardous | |

Source: JP Morgan TCFD Report 2022

# TCFD: STRATEGY
# EXAMPLE – JP MORGAN TCFD REPORT 2022

## Investment stewardship: Engagement and proxy voting

Exhibit XVI. J.P. Morgan Asset Management 2021 Engagements with investee companies on climate risk

**873**

Engagements on climate risk

**614**

Companies engaged on climate risk

**25**

Sectors engaged on climate risk

**47**

Markets engaged on climate risk

### *Proxy voting*

We consider voting against directors, executive compensation or other management resolutions where we are not satisfied with the steps taken by the company on climate risk, the quality of the engagement discussion or its progress. Voting on climate change shareholder proposals is another important way of expressing our views where we think management could better manage climate risk. Climate resolutions are complex. We tend to support votes on governance and strategy transparency, climate risk disclosure and lobbying. We also recognise that some industries have characteristics that do not suit broad-brush, top-down action, which means we consider climate resolutions based on their individual merits. For more information see our paper Our approach to climate risk votes. For specific examples of our voting on climate-related issues in various regions globally, please refer to our recent report.



Source: JP Morgan TCFD Report 2022

# CASE STUDY

CREDIT SUISSE

TCFD
Report 2021

# TCFD: STRATEGY
# EXAMPLE – CREDIT SUISSE TCFD REPORT 2021

## General classification of climate-related risks and opportunities

We recognize climate change as one of the most significant risks facing our planet. Climate risk is central to our sustainability agenda at Credit Suisse, as we look to limit the impacts that result from the transitional or physical effects of climate change. We continue to work on the measures required to address climate change, in support of a transition towards lower-carbon operations and products.

## Identification of short, medium and long-term climate risks and opportunities by Credit Suisse

### Summary of main climate-related risks identified by Credit Suisse

The overarching aim of the Risk Appetite Framework (RAF) is to understand the financial risks stemming from climate change and how they will affect our business model. This is achieved by assessing climate-related risks in our portfolio, both physical and transition risks, and highlighting areas for further development. This includes next steps to improve the risk identification, measurement, monitoring and reporting of these risks going forward.

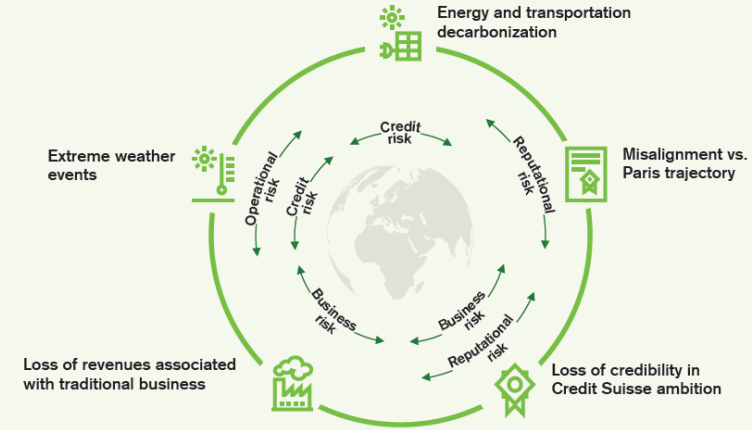
As part of the process, we receive input from our legal entity and divisional teams from our UK-based entities, where climate risk was first applied within the RAF. Having tested this risk management approach, we are starting to deploy it to different legal entities as well as the global portfolio, with appropriate jurisdiction specific amendments.

An enterprise view has been adopted, in which we have identified key risks associated with climate change (refer to chart on climate risk manifestation) and considered these risks against different time spans over the short, medium and longer term. This identification process includes a climate assessment of the various risk types (market risk, credit risk, liquidity risk, business risk, reputational risk and operational risk) and different products within the bank portfolio. Based on this assessment, remediation plans are put into place in an effort to resolve any weaknesses highlighted in our current framework.

We reported these risks in 2020 and plan to continue to enhance the identification and assessment of these risks through a more quantitative and comprehensive analysis across our businesses throughout 2022, in line with the Basel Committee on Banking Supervision principles.

Climate-related risks manifestations linked to other types of risks including credit risk, market risk, liquidity risk, and business risk.

### Climate-related risk manifestations




**Energy and transportation decarbonization:** Global policies (e.g., cross-border carbon tax) and/or technological breakthroughs might accelerate the transition towards greener energy sources and products. This could trigger a wave of defaults and reallocation of capital.
Manifestation: Credit risk, market risk, liquidity risk

**Misalignment vs. Paris trajectory:** Industry-wide trajectories, common metrics and pathways for financial institutions are currently being set. Credit Suisse actively promotes transition, but also depends on clients to engage, commit and deliver on commitments towards "net zero" in a collaborative effort.
Manifestation: Reputational risk

**Loss of credibility in Credit Suisse ambition:** We are committed to play a leading role in sustainability and we are striving to achieve that position, with significant management focus. The journey towards leadership will entail significant efforts on multiple fronts with potential execution risk and includes external dependencies.
Manifestation: Reputational risk, business risk

**Loss of revenues associated with traditional business:** Based on our risk management framework, transactions with clients that do not have a credible transition plan, may be rejected. This may result in loss of revenues associated with such transactions and assets under management if clients decide to move assets away. At the other end of the spectrum, a slow pivoting towards "green" may alienate clients who strongly support the transition, and thereby also lead to a loss of AuM.
Manifestation: Business risk

**Extreme weather events:** More frequent and severe weather events might lead to credit risk implications related to the financed portfolios as well as operational risks related to buildings and infrastructure owned by Credit Suisse as well as overall business continuity.
Manifestation: Credit risk, operational risk, market risk

Source: Credit Suisse TCFD Report 2021

# TCFD: GOVERNANCE
# EXAMPLE – CREDIT SUISSE TCFD REPORT 2021

Including type of opportunities, activates and time horizon

## TCFD Opportunities

| # | Type | Climate-Related Opportunity | Horizon* |
|---|---|---|---|
| 1 | Markets | Financing: Equity issuance (e.g., through sustainable capital markets transactions, private placements, or SPACs) aligned with the Credit Suisse Sustainable Activities Framework as well as M&A sell-side and buy-side advisory to support the transition of our clients to reach a stronger ESG performance. | ST-LT |
| 2 | Markets | Financing: Issue green debt financing instruments (private or public debt, structured notes) to fund projects or assets that mitigate climate change by reducing emissions, protect ecosystems, or otherwise have a positive environmental impact. | ST-LT |
| 3 | Markets | Financing: Lending to fund green or climate-related projects (e.g., renewable energy infrastructure, low-carbon public transportation) or technologies that are expected to play an important role in decarbonizing the economy ("green loans") or offering sustainability-linked loans whose pricing is based on the borrower's ESG score or overall sustainability achievements. | ST-LT |
| 4 | Markets | Financing: Evaluate new property investments also from an ESG perspective with respect to the impact on a property's current and potential future value as it relates to energy efficiency, public transport connectivity, use of sustainable materials, tenant well-being, and community engagement. | ST-LT |
| 5 | Products and Services | Investing: Actively exercise the bank's rights as shareholder in companies or on behalf of clients by voting at shareholder meetings and actively engaging with investee companies in order to preserve long-term shareholder value, enhance long-term returns, and influence companies' ESG performance. | ST-LT |
| 6 | Products and Services | Investing: Integrate environmental, social, and governance (ESG) criteria along the investment process consequently and broad-based with the objective to achieve an improved risk-return profile in clients investment portfolios and make portfolios more resilient against financial market shocks resulting from climate risks. | ST-LT |
| 7 | Products and Services | Investing: Develop investment strategies premised on the view that a rapid shift in public sentiment and policy-making regarding the climate may lead to a large variation in the fortunes of companies that stand to gain from the resulting transition, and those that will lose. | ST-LT |
| 8 | Products and Services | Investing: Expand the product offering to investment strategies that are aligned with the Credit Suisse Sustainable Investment Framework, which allows clients to make a positive impact on society and environment without sacrificing returns. | ST-LT |
| 9 | Products and Services | Advise: Provide financial advice and develop financing strategies that enable existing and prospective clients to move towards a low-carbon economy and reach a stronger ESG performance. | ST-LT |
| 10 | Products and Services | Advise: Provide investment advice to enable existing and prospective clients to better understand and manage their exposure to climate risks and enhance their resilience to both physical and transition risk. | ST-LT |
| 11 | Products and Services | Advise: Capture client ESG interests and preferences in an ESG profile as basis of our integrated advisory process. | ST-LT |
| 12 | Products and Services | Reporting: Provide ESG reporting at portfolio level as part of our ESG integrated advisory process to identify climate related risks and opportunities that can lead to switch proposals. | ST-LT |
| 13 | Resource Efficiency | Office efficiency: Improve energy efficiency of current office space and capture cost-savings from optimization programs and investments in energy efficient technologies and energy storage. | ST-LT |
| 14 | Resource Efficiency | Office space optimization: Optimize office occupancy rate by rationalizing down office space in a hybrid working model that is flexible to allow for increased levels of home working. | ST-LT |
| 15 | Resource Efficiency | Office lease: Develop sustainability criteria for office selection and green leasing policies for landlord-controlled spaces to create incentives for efficiency gains. | ST-LT |
| 16 | Resource Efficiency | Data center efficiency: Improve utilization and energy efficiency of in-house data centers and capture cost-savings from optimization programs and investments in energy efficient technologies and energy storage. | ST-LT |
| 17 | Resource Efficiency | Data center optimization: Source third-party suppliers and cloud providers with improved energy and carbon performance aligned with industry best practice. | ST-LT |
| 18 | Energy Source | Renewable electricity supply: Source 100% of electricity from renewable sources for all data centers and office space. | MT |
| 19 | Energy Source | Transition heating to zero carbon: Replace fossil fuel heating with efficient electrical systems using air source or ground source heat pumps powered by renewable electricity. | MT-LT |
| 20 | Energy Source | Onsite and offsite generation: Onsite and offsite generation for office buildings and parking lots (e.g., solar panels). | MT-LT |
| 21 | Energy Source | Vehicles: Shift leased, owned and third-party fleets to low carbon vehicles, install onsite charging infrastructure for electric vehicles and introduce employee schemes for electric vehicles or low carbon alternatives. | MT-LT |
| 22 | Resilience | Procurement: Engage suppliers across our supply chain to improve carbon performance and introduce low carbon policies. | ST-LT |
| 23 | Resilience | Sourcing: Increase supply of renewable energy to offices and data centers and use electrical storage where possible. | MT-LT |
| 24 | Resilience | Employee engagement: Encourage employees to take climate actions in office, expand employee training and benefit programs that enable employees to calculate their own carbon footprint, and reduce carbon emissions through a range of actions that include renewable energy, electric vehicles, and more efficient modes of travel. | MT-LT |
| 25 | Resilience | Data and management information: Develop management information dashboards structured on climate-impact data, to enable decision making processes. | MT-LT |

Source: Credit Suisse TCFD Report 2021

# TCFD: GOVERNANCE
# EXAMPLE – CREDIT SUISSE TCFD REPORT 2021

THAILAND DEVELOPMENT RESEARCH INSTITUTE

Sustainable Investment Framework

## Credit Suisse Sustainable Investment Framework

Sustainable solutions are using at least one or even several tools to classify and manage investment strategies accordingly:

**ESG reporting**

Transparency on portfolio exposure to ESG related risks, opportunities and impact.

**Active ownership (voting and engagement)**

Active ownership has the potential to transform our role from a capital allocator to an agent of change. Through corporate engagement and voting, we exert our influence and help corporate transitions towards more sustainable pathways.

| **Exclusions**<br>Avoiding harmful investments | **ESG integration**<br>Better informed investment decisions through integration of ESG insights | **Sustainable thematic and impact** |
|---|---|---|
| ▪ Systematic avoidance of exposure to controversial areas or unethical behaviors<br>▪ Norms-based exclusions<br>▪ Values-based exclusions<br>▪ Exclusions based on business conduct (United Nations Global Compact breaches) | ▪ Consideration of financially significant ESG risks and opportunities<br>▪ Based on industry-specific sustainability expertise<br>▪ Reflects the Credit Suisse house view on ESG topics<br>▪ ESG integration in investment processes in combination with financial analysis<br>▪ Approach adapted to asset class, product features and investment objectives | **Sustainable thematic**<br>▪ Participation in sustainable growth themes<br>▪ Firms with positive contribution to the SDGs<br>▪ Mostly liquid strategies<br>**Impact investing**<br>▪ Products that fully comply with the IFC definition of impact investing: Measurable positive social or environmental impact, alongside financial returns<br>▪ Investor contribution to the impact of the enterprises via financing growth or active ownership<br>▪ Mostly illiquid strategies |

ESG = Environmental (E), Social (S) and (Corporate) Governance (G); IFC = International Finance Corporation
For further information about the ESG investment criteria, please visit www.credit-suisse.com/sustainability.

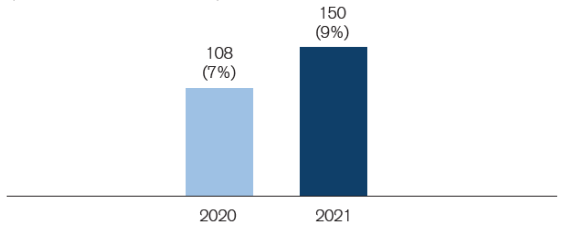
**More information** is provided on our website under "Agreements & Memberships."

We believe that each of these approaches adds value in its own right and may be suitable for different types of investors with different types of investment goals.

**Growth of Sustainable AuM**
At the end of 2021, Credit Suisse's sustainable assets under management (AuM) was CHF 150 billion (up 39% year on year), of which CHF 19 billion was thematic and impact investment AuM. This includes only AuM balances from managed solutions that to date have been mapped to a sustainability rating of 2 and higher, based on our internal ESG framework scale (0-5). **The majority of this growth has been achieved through progress on our framework implementation and product classification.** The other relevant drivers include the launch of new sustainable funds, net sales of existing sustainable funds and positive market performance.

**More information** is provided in our "The Credit Suisse Sustainable Investment Framework."

**Sustainable AuM**
in CHF bn
(% share of total AuM)




Source: Credit Suisse TCFD Report 2021

# CASE STUDY


TDRI THAILAND DEVELOPMENT RESEARCH INSTITUTE

# TCFD: STRATEGY
# EXAMPLE – BLACKROCK TCFD REPORT 2021

Looking at the climate-related risks and opportunities from two perspectives

**Exhibit S.1: Overview of Strategy to Address Climate-Related Risks & Opportunities**

| As an **ASSET MANAGER** | As a **COMPANY** |
|---|---|
| **Sustainable Investment Solutions**<br>Expanding offerings of sustainable investment products | **Corporate Operations**<br>Reducing the environmental footprint of our operations |
| **Investment Stewardship**<br>Engagement & proxy voting on material climate and natural capital issues | **Vendor Sustainability**<br>Encouraging vendors to set science-aligned emissions reduction targets |
| **ESG Integration & Insights**<br>Incorporating material climate considerations into active investment decisions & ESG Research | **Public Policy & Industry Engagement**<br>Encouraging standards and regulations for climate disclosures |
| **Aladdin**<br>Putting sustainability at the heart of Aladdin and developing Aladdin Climate | **The BlackRock Foundation**<br>Supporting critical climate technologies through philanthropy |

**COMMITMENT TO TRANSPARENCY** *at firm and fund level*

Source: Blackrock TCFD Report 2021

# TCFD: STRATEGY
# EXAMPLE – BLACKROCK TCFD REPORT 2021

Adding Natural Capital perspective to the investment stewardship

**Exhibit S.2: BIS' approach to Climate Risk and Natural Capital**

| Climate Risk | Natural Capital |
| --- | --- |
| In 2021, BIS asked companies to articulate how their business model is aligned to a scenario in which global warming is limited to well below 2° C, consistent with a global aspiration to reach net zero emissions by 2050. BIS also encouraged companies to provide disclosure aligned with the TCFD, including Scope 1 and Scope 2 emissions. Companies in carbon-intensive industries were also encouraged disclose Scope 3 emissions. | In 2021, BIS released a commentary on its approach to natural capital, encouraging companies to disclose how their business models are consistent with the sustainable use and management of natural capital, including natural resources such as air, water, land, minerals, and forests. BIS also sought to understand how companies promote biodiversity and ecosystem health and the responsible use of energy, as well their impact on communities in which they operate. |

Source: Blackrock TCFD Report 2021

# TCFD: STRATEGY
# EXAMPLE – BLACKROCK TCFD REPORT 2021

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## Engagement and proxy voting

**Exhibit S.3: Engagement and Voting for climate-related concerns**

| 2,330 | 107 | 2% | 255 | 319 |
|---|---|---|---|---|
| Engagements on climate and natural capital | Votes against companies for inadequate sustainability reporting | Votes against management on climate risk concerns at approximately 2% of the 13,190 companies BIS voted at on behalf of BlackRock's clients. | Votes against director elections for climate-related concerns[a] | Unique companies voted against for climate-related concerns[b] |

- Increasing the scope of identified carbon intensive companies
- Disclosing the procedure to review climate action plan whether the companies meet the investment standards

**Climate Focus Universe.** In 2020, BIS focused on a universe of 440 carbon intensive companies. BIS identified 244 companies within this universe that did not meet BIS' standards of managing climate-related risks or adequately addressing exposure to such risks.[3] In 2021, BIS expanded the Climate Focus Universe to over 1,000 carbon-intensive public companies.[4] For companies in the Climate Focus Universe, BIS reviews their climate action plans and disclosures – voting against management when BIS believes that accelerated progress towards climate risk mitigation is necessary to drive sustainable, long-term financial returns for clients. Between July 1, 2020 and June 30, 2021 (the "2020-2021 proxy year"), BIS had over 1,300 engagements with nearly 670 of the companies in the 2021 Climate Focus Universe.

Source: Blackrock TCFD Report 2020 and Blackrock TCFD Report 2021

# TCFD: STRATEGY
# EXAMPLE – BLACKROCK TCFD REPORT 2021

Example of disclosures on Active Investment Strategies

- **Fundamental equity**
    1. Core - Firms with better ESG scores. Use Different classification i.e. best-in-class, improvers, enablers
    2. Thematic – Sector specific and SDG-aligned
    3. Impact
- **Systematic Strategies** – managing across three main categories 1. core equity and fixed income ESG strategies 2. multi-asset strategies, and 3. liquid alternative ESG strategies. This does not divest from specific sectors, rather the team tilts to more sustainable companies within each sector.
- **Active fixed income** – including green and social bond strategies



Source: Blackrock TCFD Report 2020 and Blackrock TCFD Report 2021

# TCFD: STRATEGY
# EXAMPLE – BLACKROCK TCFD REPORT 2021

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Linking climate-related **risks** with financial impact both on the products & services perspective and operational perspective

| Risk | Description | Primary Anticipated Financial Impact |
|---|---|---|
| **Market** | Climate-related risks could impact the value of BlackRock's AUM and reduce investment management revenue. BlackRock may be unable to develop new products and services and the development of new products and services may expose BlackRock to reputational harm, additional costs, or operational risk. Unsuccessful efforts to develop products to suit clients' climate-related needs could expose BlackRock to additional costs and/or cause revenue and earnings to decline. Changes in client preferences and/or changes to regulation to which its clients are subject could reduce demand for certain investment products offered by BlackRock. | Reduced Revenues |
| **Reputation** | Stakeholder concern and/or associated activism related to the impact of BlackRock's client portfolio holdings on the climate as well as BlackRock's stated views on climate-related matters could create reputational risk, reduce client and employee loyalty, or lead to shareholder divestment.[1] | Reduced revenues |
| **Regulatory** | New environmental and sustainability-related disclosure requirements, or regulations or taxes that apply to BlackRock's investment products or other aspects of BlackRock's operations could increase compliance costs or make BlackRock's products less desirable to clients. New laws or regulations could restrict or discourage the use of BlackRock's investment products and/or services by clients due to authorities' views on BlackRock's actions related to climate- and other sustainability-related matters. | Increased expenses or reduced revenues |
| **Physical** | BlackRock's global offices could be impacted by adverse climate events; however, the direct financial impact is limited, as BlackRock leases most of its facilities[2] and sites are evaluated for physical risks during the selection process. Further, BlackRock maintains insurance, which helps to mitigate the potential financial impact of physical climate risks. Additionally, BlackRock maintains business continuity plans to facilitate the continuity of business in the event of a business disruption, which can include disruptions related to physical climate risks. | Increased expenses |

Source: Blackrock TCFD Report 2021

# TCFD: STRATEGY
# EXAMPLE – BLACKROCK TCFD REPORT 2021

Linking climate-related **opportunities** with financial impact both on the products & services perspective and operational perspective

**Exhibit S.6a: Summary of Key Climate-Related Opportunities**

| Opportunity | Description | Primary Anticipated Financial Impact* |
|---|---|---|
| **Products & Services**<br>Investment Solutions | BlackRock's $434 billion dedicated sustainable investment platform is well-positioned to meet increased demand as more clients focus on the impact of climate change on their portfolios. BlackRock's iShares® Sustainable ETF range is one of the largest in the industry, both in terms of AUM and the number of investment options provided to investors. BlackRock manages one of the largest renewable power infrastructure investment platforms in the world and is one of the largest investors in green bonds on behalf of clients. | Increased revenues |
| **Products & Services**<br>Aladdin | There is increasing demand from Aladdin clients to understand their exposure to climate-related risks in their portfolios. Building on BlackRock's strength in risk management through the Aladdin® platform, BlackRock launched Aladdin Climate to address this need. Aladdin Climate translates climate risks and opportunities into investment terms so that investors can understand their exposure to the financial risks associated with climate change and take action in their portfolios. | Increased revenues |
| **Resource Efficiency**<br>Operations | In its operations, BlackRock's sustainability strategy seeks to decouple company growth from its impact on the environment, while increasing the efficiency and resiliency of its operations. Finding innovative ways to run its operations with renewable energy, lower emissions, and reduce waste, among other efforts, reduces BlackRock's environmental impact. | Reduced Expenses |

Source: Blackrock TCFD Report 2021

# TCFD: STRATEGY
# EXAMPLE – BLACKROCK TCFD REPORT 2020 VS 2021

## Climate Scenario disclosure

**Risk identification**

Identified key climate-related risks to BlackRock

**Scenario Selection**

Selected two climate transition scenarios and two physical climate scenarios to represent a range of potential future outcomes

**Scenario Implementation**

- Identified required data inputs and analytical specifications
- Utilized Aladdin Climate to assess asset-level climate-related impacts through climate-adjusted security and portfolio risk metrics
- Conducted internal workshops to discuss the implications of the scenarios for BlackRock's business and developed assumptions around client behavior and product flows not included in pre-specified scenarios
- Updated analytical specifications based on internal workshops to produce final output

## Aladdin Climate Approach for modelling climate risks for individual securities and portfolios

**01**

**Select a Climate Scenario**

Assess expected risks under forward-looking climate scenarios

**02**

**Assess the sector & Economic Impact**

Convert climate projections into forecasts of sector & economic impact

**03**

**Map to Company & Asset Information**

Map sector impacts and geolocations to individual companies and assets

**04**

**Translate into Financial Terms**

Translate into financial risks and temperature metrics at security and portfolio level

Source: Blackrock TCFD Report 2021

# TCFD: STRATEGY
# EXAMPLE – BLACKROCK TCFD REPORT 2020 VS 2021

## Climate Scenario disclosure

| | Orderly – Net Zero 2050 | Disorderly – Delayed Transition | RCP 4.5 – Some Climate Action | RCP 8.5 – No Climate Action |
|---|---|---|---|---|
| **Description** | Stringent climate policies and innovation, reaching global net zero $CO_2$ emissions around 2050 | Climate policies are delayed, which forces a very aggressive policy response starting in 2030 | Emissions peak around 2040 then decline | Global emissions grow through the rest of the century |
| **Expected Temperature Rise *** | 1.5°C | 1.8°C | 2.4°C ** (1.7°C to 3.2°C) | 4.3°C (3.2°C to 5.4°C) |
| **Transition or Physical** | Transition | Transition | Physical | Physical |
| **Source** | NGFS | NGFS | IPCC | IPCC |

Scenario selection:

Transition risk - BlackRock selected **two climate transition scenarios** developed by the Network for Greening the Financial System ("NGFS"): (1) Orderly – Net Zero 2050; and (2) Disorderly – Delayed Transition. These transition pathways use three detailed integrated assessment models ("IAMs") given the range of climate sensitivities.

Physical risk - BlackRock sought to review physical risk scenarios with a range of temperature outcomes. **Two scenarios developed** by the Integrated Assessment Modeling Consortium ("IAMC") and used in the Intergovernmental Panel on Climate Change ("IPCC")'s Fifth Assessment Report were selected for the analysis: (1) RCP 4.5 –some climate action; and (2) RCP 8.5 –no climate action.

Source: Blackrock TCFD Report 2021

# TCFD: STRATEGY
# EXAMPLE – BLACKROCK TCFD REPORT 2020 VS 2021

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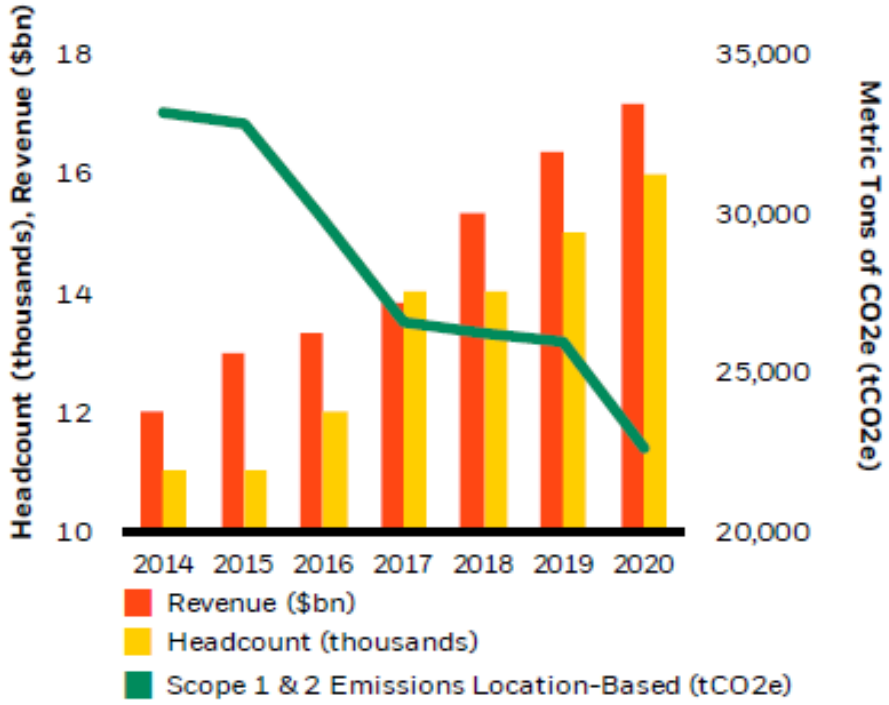
## Operation

**Exhibit S.10: Revenue and Headcount Growth vs. Greenhouse Gas Emissions**




Source: BlackRock as of December 31, 2020.

Other activities include:

- Assessing impact on business travel
- Tracking and setting target for electricity used, and enhancing energy efficiency and incising clean energy use
- Developing carbon credit projects



Source: Blackrock TCFD Report 2021

# THAI SEC'S GUIDELINES ON MANAGEMENT AND DISCLOSURE OF CLIMATE RELATED RISKS: INVESTMENT MANAGEMENT

TDRI THAILAND DEVELOPMENT RESEARCH INSTITUTE

## การบริหารจัดการลงทุน (investment management)

1. การระบุ climate risks ที่ relevant และ material สำหรับแต่ละกลยุทธ์การลงทุน และกองทุนที่บริหารจัดการ รวมทั้งผนวกข้อมูลด้าน climate ในการวิเคราะห์หลักทรัพย์
2. การพิจารณา climate risks ควรมองทั้ง physical risks และ transition risks ในระดับกองทุน และระดับบริษัท โดยอาจอิงจาก GRI, CDP, SASB, TCFD
3. หากพิจาราณาแล้วว่า climate risks ไม่ relevant ในส่วนใด ควรเปิดเผยข้อมูลให้ผู้ลงทุนทราบ
4. มีหลักเกณฑ์ หรือ metrics ในการระบุกลุ่มอุตสาหกรรมที่มี climate risks สูงกว่าอุตสาหกรรมอื่น โดยอาจพิจารณาจากปริมาณการปล่อย GHGs หรือผลกระทบจากสภาวะอากาศสุดขั้ว การพึ่งพา non-renewable energy/conventional energy การเกี่ยวข้องกับการตัดไม้ทำลายป่า หรือการสร้างมลภาวะอื่น ๆ
5. ระบุประเภทธุรกิจที่จะทำการลงทุน หรือระบุข้อจำกัดในการลงทุนที่สอดคล้องกับ metrics ที่ใช้ในการระบุกลุ่มอุตสาหกรรม
6. การประเมิน materiality แต่ละ asset classes อาจทำดังนี้
    1. ตราสารทุน – พิจารณาผลกระทบจาก climate risks ต่อการดำเนินงานในระยะยาวของบริษัทที่ลงทุน เพิ่มเติมจากระยะสั้น หรือกลาง
    2. ตราสารหนี้ – พิจารณาผลกระทบจาก climate risks จากผู้ออกตราสาร เพื่อประเมิน climate risk ที่เกี่ยวข้องกับ credit risk หากเป็นการออกตราสารเพื่อใช้ในโครงการเฉพาะ อาจประเมิน climate risks ที่เกี่ยวข้องกับโครงการโดยตรง
    3. หน่วยลงทุนของกองทุนอื่น – พิจารณาผลกระทบจาก climate risks จาก governance, investment management, risk management, stewardship และ disclosure ของกองทุนปลายทาง และบริษัทที่บริหารกองทุน

# THAI SEC'S GUIDELINES ON MANAGEMENT AND DISCLOSURE OF CLIMATE RELATED RISKS: INVESTMENT MANAGEMENT

TDRI THAILAND DEVELOPMENT RESEARCH INSTITUTE

## การบริหารจัดการลงทุน (investment management)

7. การประเมิน climate risks อาจใช้ข้อมูลการประเมินของหน่วยงานภายนอกเพิ่มเติมด้วย ทั้งนี้ ควรพิจารณาความเชี่ยวชาญ และตรวจสอบวิธีการประเมินต่าง ๆ ว่ามีความสมเหตุสมผลหรือไม่

8. คำนึงถึงสัดส่วนการลงทุนในกลุ่มอุตสาหกรรมที่มีความเสี่ยงด้าน climate risks เช่น กลุ่มอุตสาหกรรมพลังงานฟอสซิล เป็นต้น

9. การประเมิน climate risks อาจแตกต่างกันตามวัตถุประสงค์และกลยุทธ์การลงทุน

    1. Passive
    2. Active

10. ควรมีการวางแผนบริหารจัดการ climate risks ของกองทุนในภาพรวม โดยเฉพาะกรณีที่ climate risks มี materiality ต่อกองทุน โดยอาจพิจารณาควบคุมปริมาณการปล่อย GHGs สำหรับของทุนนั้น ๆ

11. ควรทบทวนการประเมิน climate risks ในกระบวนการวิเคราะห์หลักทรัพย์ และการบริหารการลงทุนอย่างสม่ำเสมอ

## KEY TAKEAWAYS

- Using **TCFD's risk classification** to think about climate-related risks/ opportunities
- Identifying **time horizon**
- Linking the risks and opportunities with **financial impacts** >> can start with the directions of each type of financial account first (e.g. increased expenses)
- Using climate scenario(s) to **test strategy resilience**
  - Can be qualitative or quantitative
  - Can start with internally-developed scenario
  - If have not completed considering scenario, disclose the progress in the report
- Disclosing investment strategy / management
  - Identify strategic plan to low-carbon economy transition or to achieve committed Net Zero
  - Disclosure Framework or metric to make decision on investment
  - Identify different data sources for investment decision making

## KEY TAKEAWAYS

Things to consider include …

- What are agreed **time horizon** (short, medium, long)?
- Is there any **industry consensus on the framework** of risk identification?
- **At what level of details** are your companies comfortable with sharing information on risks and opportunities?
- What are the **metric and methodology** to assess materiality?
- What **sources of data** your companies use to develop ESG rating or used in sustainable investment?
- Why **certain scenarios are chosen** and how those are applied to the companies' strategies?

GUIDELINES FOR CLIMATE RISK MANAGEMENT SERIES

## Session 1: Introduction to TCFD and Governance

## Session 2: Investment Management

## Session 3: Risk Management & Metrics and Targets

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# THANK YOU

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