Climate Risk Management – Mining the Transition to the Net Zero World

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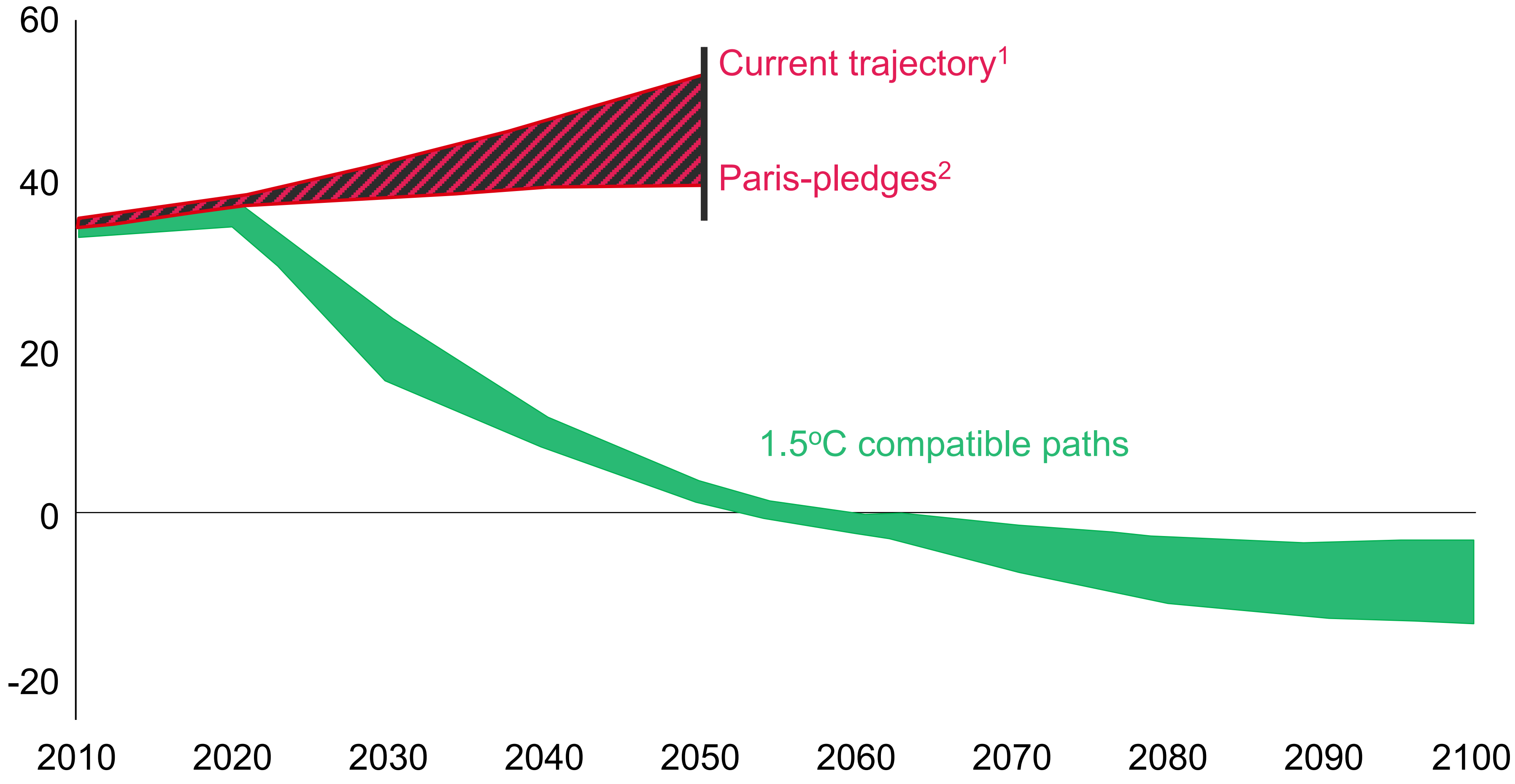
Climate Risk Management and the Mining Sector – Insights from the 2020 TCFD Reporting Season

The necessary material reduction in emissions profile required to deliver the Paris Agreement will have implications for the Mining Industry

Global net CO_2 emissions pathways

Emissions per year

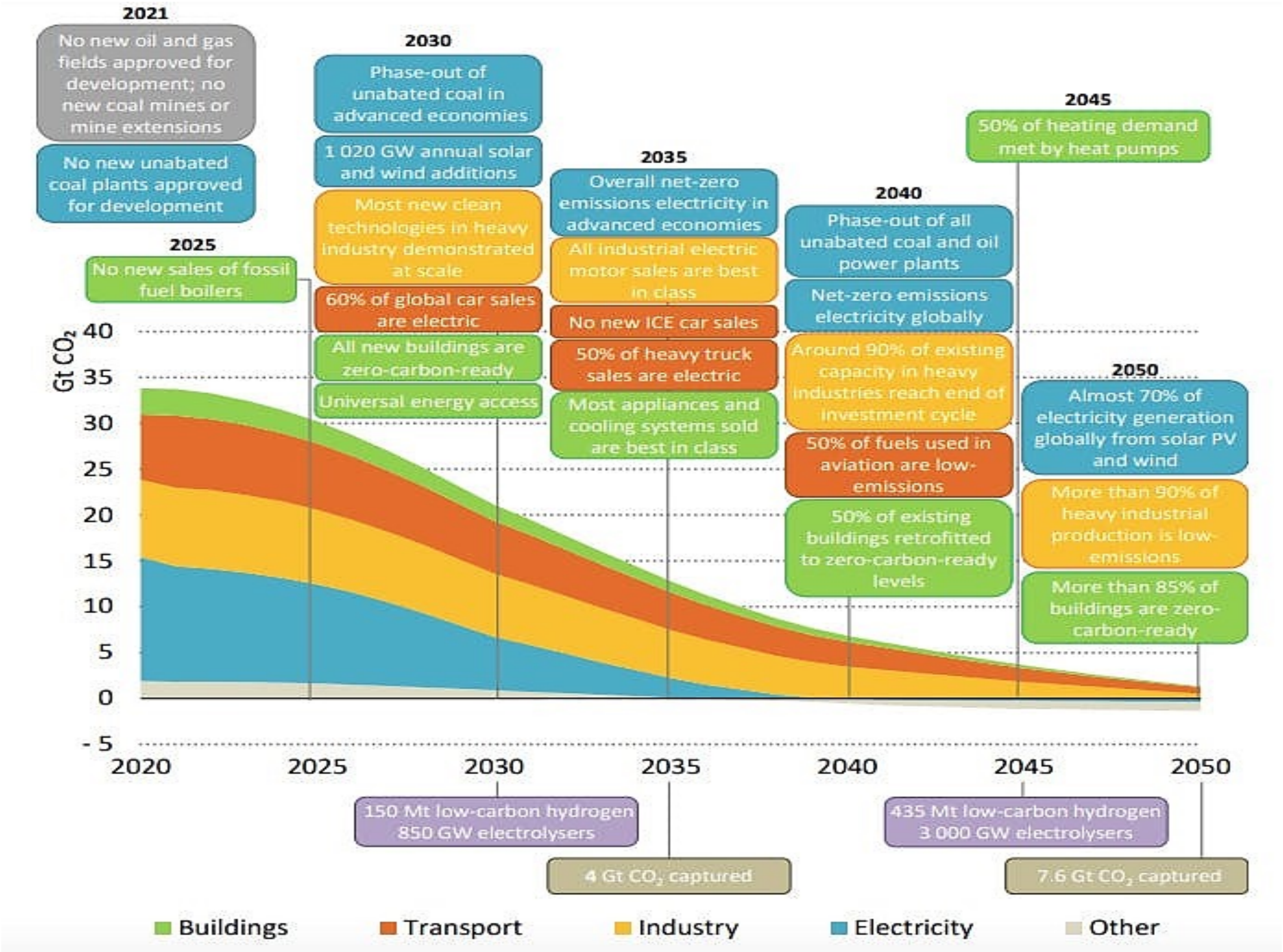


- We have already passed the 1ºC temperature increase
- At current emissions, the world is heading to a 4ºC increase in temperature
- We have about 8 years of emissions left within the carbon budget that enables a 2ºC world
- A sharp change in the global emissions profile is required, with ultimately Net Zero emissions – Mining Sector has a key role

Source: IPCC, UNEP Emissions Gap Report
1. Assumes CO_2 emissions grow from 2018 at same rate as the Current Policies scenario in UNEP 2019 Gap report to 2050 (1.1% CAGR)
2. Assumes countries decarbonise beyond the same annual rate that was required to achieve their INDCs between 2020 and 2030

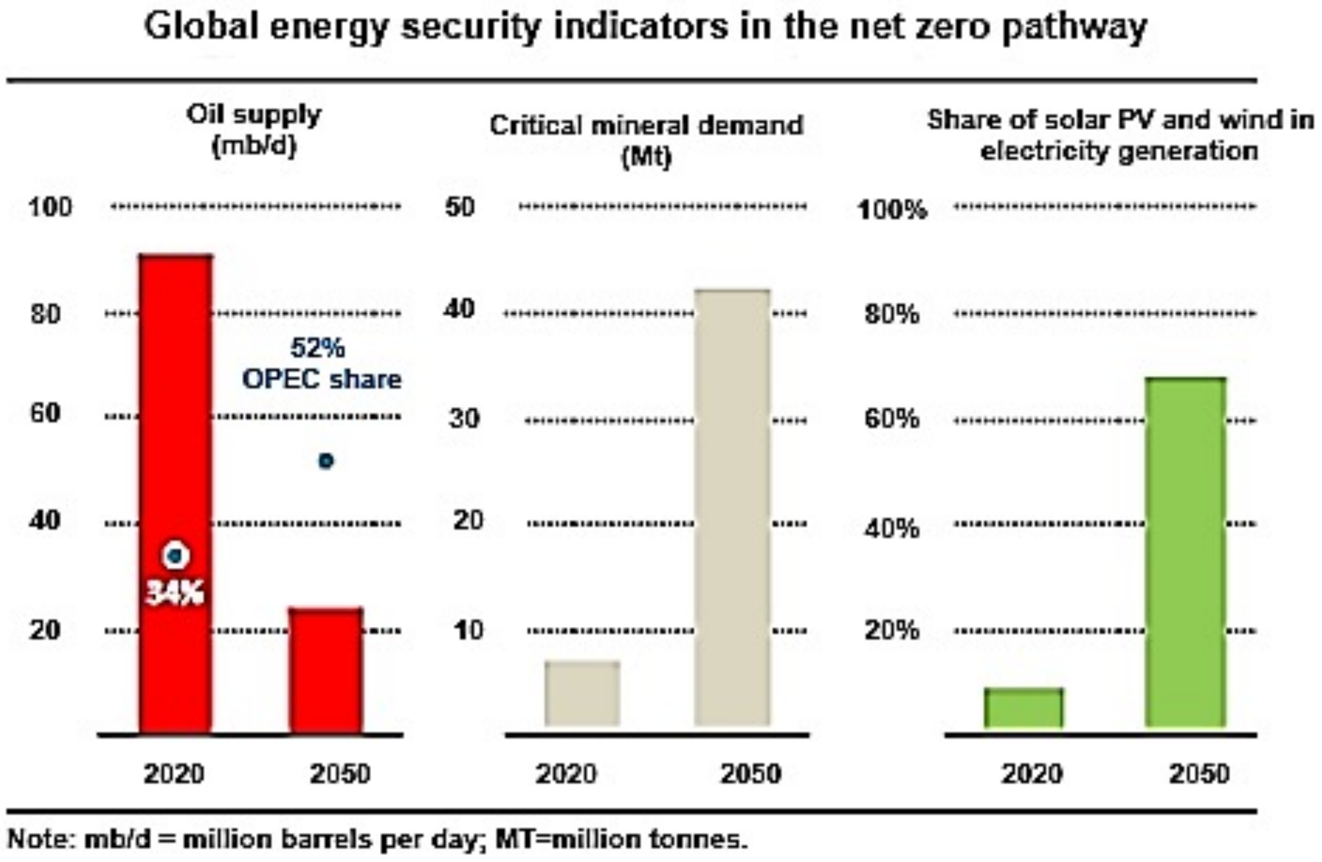
Note: Emissions of non-CO_2 forcers are also to be reduced by more than 50% in pathways limiting global warming to 1.5ºC

The path to net-zero and the mining sector- insights from the recent IEA report "Net Zero by 2050- A Roadmap for the Global Energy Sector"



1. Source: https://iea.blob.core.windows.net/assets/063ae08a-7114-4b58-a34e-39db2112d0a2/NetZeroby2050-ARoadmapfortheGlobalEnergySector.pdf

The path to net-zero and the mining sector- more insights from the recent IEA report "Net Zero by 2050- A Roadmap for the Global Energy Sector"



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Strong risk management must underpin the journey – there are essential operational building blocks

From: Bank of England – "A strategic approach to managing the financial risks from climate change" (SS 3/19)

Governance

- **Board** to **understand and assess the financial risks** from climate change that affect the firm, and to be able to **address and oversee these risks within the firm's overall business**

Scenario analysis

- **Conduct scenario analysis** to inform strategic planning and determine the impact of the financial risks.

Risk Management

- **Includes risk identification and measurement ,risk monitoring, risk management and mitigation.**

Disclosure

- Existing requirements to disclose information on **material risks within Pillar 3 disclosures** and **on principal risks and uncertainties in Strategic Report**

Source: Supervisory Statement | SS3/19 Enhancing banks' and insurers' approaches to managing the financial risks from climate change, April 2019

Climate risks translate into financial risks to be managed by the Mining Sector

Impact of transition risks and physical risks on the economy and financial system through various transmission channels

Transmission channels
Climate risks to financial risks

Climate risks

Transition risks
- Policy and regulation
- Technology development
- Consumer preferences

Physical risks
- Chronic (e.g. temperature, precipitation, agricultural productivity, sea levels)
- Acute (e.g. heatwaves, floods, cyclones and wildfires)

Economic transmission channels

Micro
Affecting individual businesses and households

Businesses
- Property damage and business disruption from severe weather
- Stranded assets and new capital expenditure due to transition
- Changing demand due to transition
- Legal liability (from failure to mitigate or adapt)

Households
- Low of income (from weather disruption and health impacts, labour market frictions)
- Property damage (from severe weather) or restrictions (from low-carbon policies) increasing costs and affecting valuations

Macro
Aggregate impacts on the macroeconomy
- Capital depreciation and increased investment
- Shifts in prices (from structural changes, supply shocks)
- Productivity changes (from severe heat, diversion of investment to mitigation and adaption, higher risk aversion)
- Labour market frictions (from physical and transition risks)
- Socio-economic changes (from changing consumption patterns, migration, conflict)
- Other impacts on international trade, government revenues, fiscal space, output, interest rates and exchange rates

Financial risks

Credit risk
- Defaults by businesses and households
- Collateral depreciation

Market risk
- Repricing of equities, fixed income, commodities, etc.

Underwriting risk
- Increased insured losses
- Increased insurance gap

Operational risk
- Supply chain disruption
- Forced facility closure

Liquidity risk
- Increased demand for liquidity
- Refinancing risk

Financial System Contagion

Climate and economy feedback effects

Economy and financial system feedback effects

Scenario analysis is an important risk management tool to model financial impact on the Mining Sector and to provide valuable insights

Overview

Purpose:

- To test the resilience of banks' current business models to physical and transition risks from climate change

Focus on:

- Sizing risks
- Expected action from financial firms' expect to adjust business models, and collective impact on wider economy
- Identifying and addressing data gaps

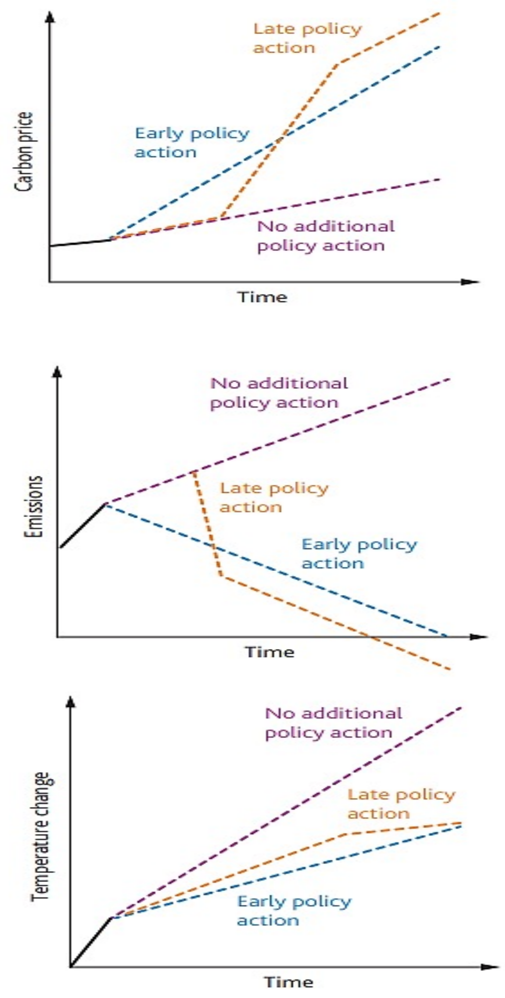
Approach:

- 30 year time horizon, reported in five-year increments 2020-50

Three scenario narratives

1. **Early policy action scenario**
2. **Late policy action scenario**
3. **No additional policy action scenario**

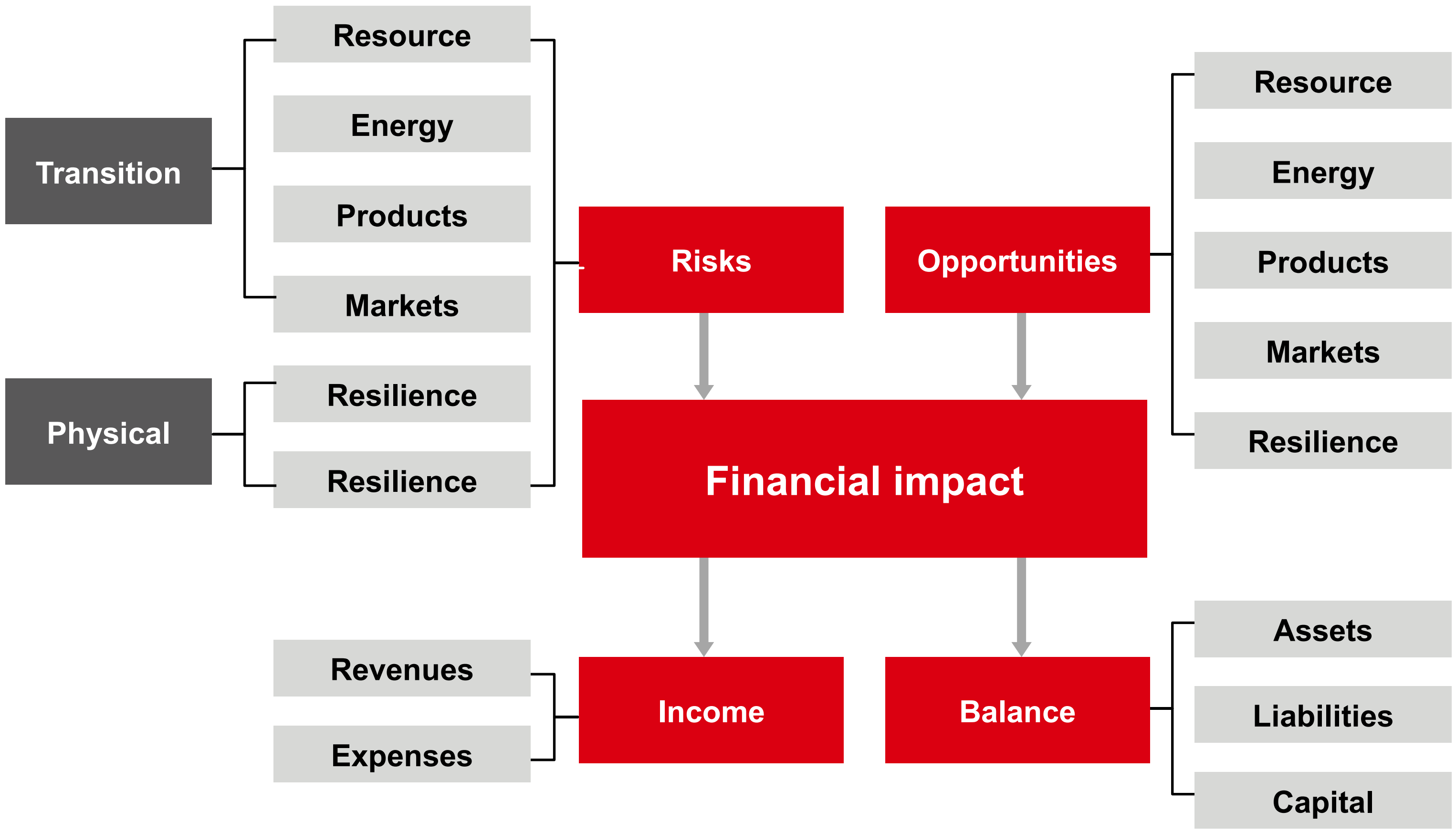
Illustrative variable pathways in each scenario



Source: Bank of England discussion paper, Dec 2019

Disclosures are an important market and financial control discipline: Task Force for Climate-related Financial Disclosure (TCFD)

Task Force for Climate Related Financial Disclosure framework



> 1000 global companies and financial institutions signed up to implement TCFD

Recommendations

- **Governance**
  - Disclose the organisation's governance around climate related risks and opportunities
- **Strategy**
  - Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material
- **Risk management**
  - Disclose how the organization identifies, assesses, and manages climate-related risks
- **Metrics and targets**
  - Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material
- **Scenario analysis**
  - Assess impact of different transition scenarios on business model and size the financial impact

Source: TCFD

Case Study 1: HSBC

- HSBC has focused on understanding customer strategy and exposure, and the impact that climate change has on corporate customers in the mining sector.
- The group has also conducted scenario analyses for the sector.
- For more information see the TCFD report: https://www.hsbc.com/-/files/hsbc/investors/hsbc-results/2020/annual/pdfs/hsbc-holdings-plc/210223-task-force-on-climate-related-financial-disclosures-tcfd-update-2020.pdf

Case Study 2 : Standard Chartered

- Standard Chartered has measured the gross physical risk profile of mining clients and has conducted assessments on their adaptation actions.
- The group has also outlined specific sustainability aspirations for exposures to thermal coal.
- For more information see the TCFD report: https://av.sc.com/corp-en/content/docs/tcfd-climate-change-disclosure.pdf

Source: HSBC TCFD Report, 2020

General - The Board and Senior Management will need to ask important questions on business model

Defining the brand, ambition and targets

- How do we want our firm to be perceived around climate change, carbon emissions, sustainable financing and broader sustainability topics?
- What global frameworks do we want to commit to (e.g. Paris Agreement, 1.5 degree target, TCFD)?. What does this mean practically?
- What targets can be tracked to monitor progress against our transition? How will these targets be perceived by investors and other stakeholders?
- Do we have the right data and systems in place to report against these targets? What additional data do we need? How do we validate the quality of the data on which we base decisions?

Aligning the business model

- What does aligning with the Paris Agreement mean in terms of the structure of our portfolio and the companies that we finance? Which sectors and companies will we have to reduce exposure to? What does it mean for our own operations and people?
- Are we willing to exit profitable customers or sectors? What timeframe is our exit strategy over? Which exit / reduce strategies could be implemented?
- Which business activities could be seen as opportunities for growth?
- Are climate considerations incorporated into the strategic planning, business models, financial planning and other decision-making processes?
- How do plans factor in the uncertain and variable nature of how climate change could affect the business over different timeframes?

General - The Board and Senior Management should also ask key risk management questions

Measuring and embedding risk management

- What is the institution's climate risk appetite?
- How is climate risk materiality assessed and reported in the short-, medium-, and long-term? How can the board ensure that responses to climate change are in proportion to the stated materiality?
- What scenarios for climate change are being used to assess the impact on the business and financial performance of the company?
- How do we stress our portfolio over a 15-30 year horizon?
- Do we invest sufficient resource in climate reporting/ risk management? What are the benefits from adding more dedicated resource in this area? What are the risks of not doing so?

Accountability, culture and training

- Where is climate risk being managed and monitored?
- To what extent are climate risks and opportunities incorporated into the board's understanding of directors' duties? Who is responsible for climate change at board level?
- Has the board considered appointing a climate expert, or creating an informal or ad-hoc climate advisory committee of internal and external experts?
- Does the composition of the board allow for informed and differentiated debate and objective decision-making on climate issues?
- What steps is the board taking to ensure it remains sufficiently educated about the relevant climate-related risks and opportunities for its business?

A recent report by Mckinsey Sustainability highlights three things that every mining CEO needs to know:

1. which assets are most at risk from physical climate change

2. how decarbonization could shift demand for key minerals

3. how miners can decarbonize their own operations

For more information visit: **https://www.mckinsey.com/business-functions/sustainability/our-insights/climate-risk-and-decarbonization-what-every-mining-ceo-needs-to-know?cid=eml-web**

Mining the Transition – Themes and Reflections

The Mining Sector has a vital role in the transition to a Low Carbon, Net Zero world

The transition to net zero has started – important to build robust transition plans

The transition must be board and senior executive led

Scenario analysis outputs and disclosures are already beginning to provide a valuable lens

Engagement is key - (https://www.cisl.cam.ac.uk/resources/publication-pdfs/lets-discuss-climate-guide-to-bank-climate-engagement-cisl-may-2021.pdf) – it will be important to think differently