

The image features a large, light gray circle in the center. Inside this circle, the word "MANTLE" is written in a bold, black, sans-serif font. To the right of the word "MANTLE" is a logo consisting of three horizontal bars: a blue bar on top, a red bar in the middle, and a yellow bar on the bottom. To the right of these bars are the numbers "3", "1", and "4" stacked vertically. The background of the entire image is white, with a pattern of small, colorful (blue, red, yellow, orange) horizontal bars scattered around the central circle.

MANTLE

climate at the core of business



Our message today

- Climate Change is impacting business now, and this will continue to accelerate
- Stakeholders want to know how it's impacting your business
- TCFD is the leading framework for that discussion
- Processes, governance and iteration are keys to successful TCFD implementation

Mantle314 is North America's largest dedicated climate change consultancy

our services



Educate: Deliver expert training and bring the latest developments and data to boards, executives and employees.



Identify: Discover climate-related risks and opportunities unique to your business.



Strategize: Provide solutions and strategies to build your corporate resilience.



Equip: Prepare your teams to make smart business decisions and seize climate-related opportunities!

our focus

- We shine the light on climate-related risk and opportunity and advance strategies to thrive.
- Mantle's team – a multi-disciplinary team of lawyers, business consultants, financial experts and engineers – has unparalleled climate-related business experience preparing clients for climate resilience.
- We bridge the gap between law, engineering, technical innovation and real world decision-making.
- Recognized by global leaders as a trusted advisor on climate-related issues.
- Cutting-edge solutions set us apart from the risk identification offered by audit firms.

Who we are

Joy Williams, Senior Advisor



Joy Williams brings a multi-disciplinary approach to climate change and other environmental, social and governance issues. Joy started her career as an engineer and has worked as a consultant on strategy and management, within the carbon markets in the UK, and as a policy advisory to the provincial

government. In the last 10 years, she has worked in the finance industry for a venture cap firm focused on greenhouse gas reduction projects and most recently for Ontario Teachers' Pension Plan establishing their responsible investing framework and as their in-house climate change expert.

Joy is a Professional Engineer of Ontario and a Chartered Alternative Investment Analyst.

Joy.Williams@mantle314.com

Laura Zizzo, Co-founder & CEO



Laura Zizzo is a lawyer and strategic advisor with over a decade of experience leading organizations towards a low-carbon and climate adapted future through the application of law and policy. Laura started her legal career with a prominent Bay Street law firm before founding the first law firm in Canada focused on climate change in 2009 and in

2015 she founded Mantle314, formerly Zizzo Strategy. Laura is co-founder of the Climate Change Lawyers Network, a member of the International Union for the Conservation of Nature (IUCN) committee on Environmental Law and a member of the University of Toronto's Environmental Finance Advisory Committee.

She has a degree in Environmental Studies from the University of Waterloo and a law degree from the University of Toronto. Laura is called to the Bar of Ontario.

Laura.Zizzo@mantle314.com



Climate change impacting global financial stability



Mark Carney
UN Special Envoy for Climate
Action and Finance.

“Carbon emissions have to decline by 45% from 2010 levels over the next decade in order to reach net zero by 2050. This requires a massive reallocation of capital. If some companies and industries fail to adjust to this new world, they will fail to exist.”



Larry Fink
BlackRock Chairman and Chief
Executive Officer

“I believe we are on the edge of a fundamental reshaping of finance ...Companies, investors, and governments must prepare for a significant reallocation of capital.”



Christian Sewing
Deutsche Bank Chief Executive
Officer

“Coronavirus is making us aware of certain things for the first time. We’re all suddenly realising what it feels like when the air is cleaner and how valuable it is when nature is more intact. Moreover, the fear of major disasters has increased as a result of the coronavirus pandemic. This will also be reflected in policymaking. So climate change is an issue that will grow rather than diminish in importance.”



Post COVID-19

“Clean reset” will include considerations of climate risk and opportunity



E.g. Canadian government is requiring large Canadian companies (revenues > CAD \$300m) publish climate-related financial disclosure, including how strategy contributes to meeting Canada’s Paris commitments to access **Large Employer Emergency Financing Facility (LEEFF)**



#7

Tell your story

The use of disclosure information is evolving. Readers don't necessarily know what they are looking for and there are few "right answers." This is your chance to create your narrative.



Role of Climate Risk in Economy and Business

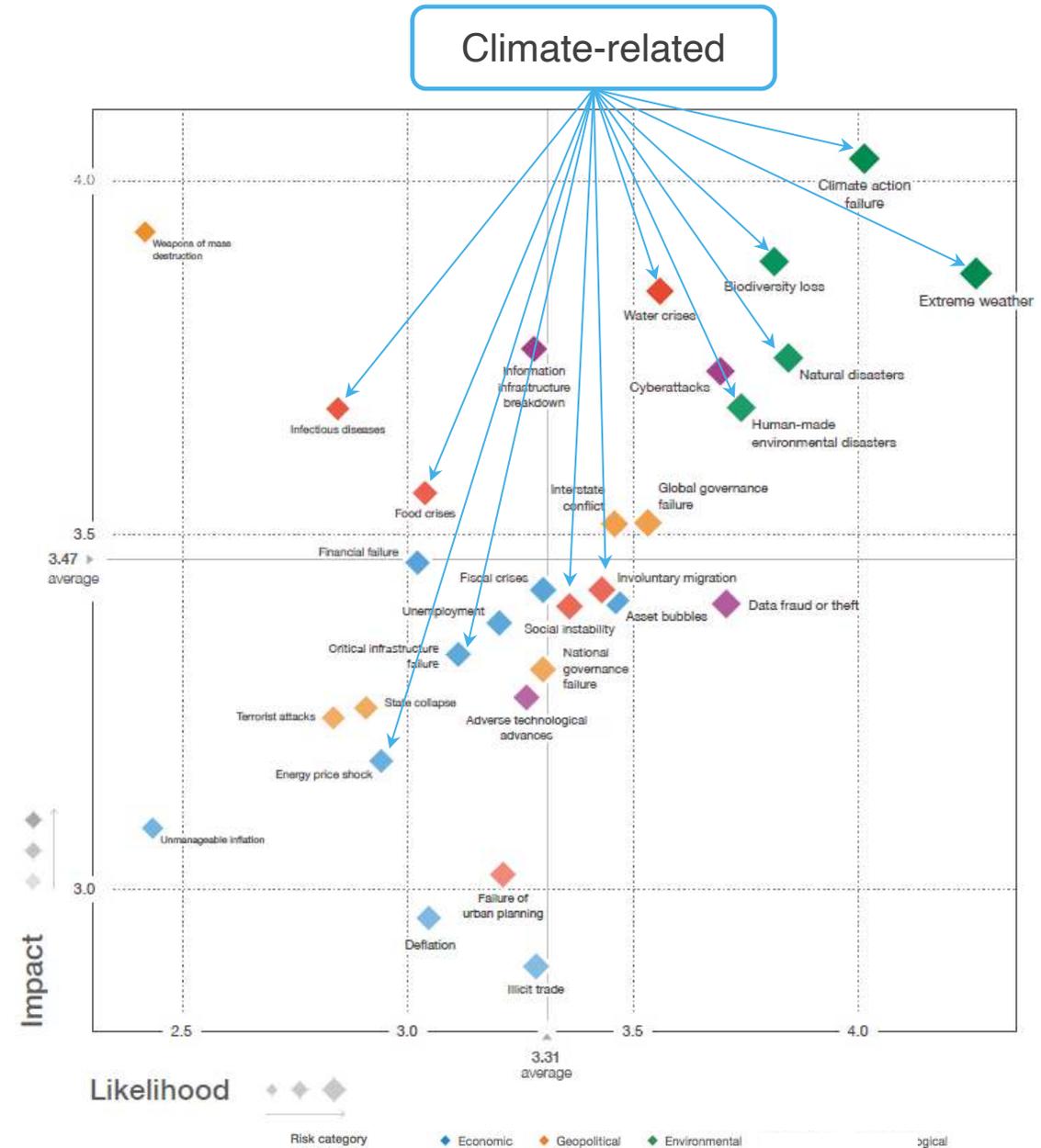
World Economic Forum: The Global Risks Report 2020

Climate-related risks rank as most likely and impactful global economic risks.

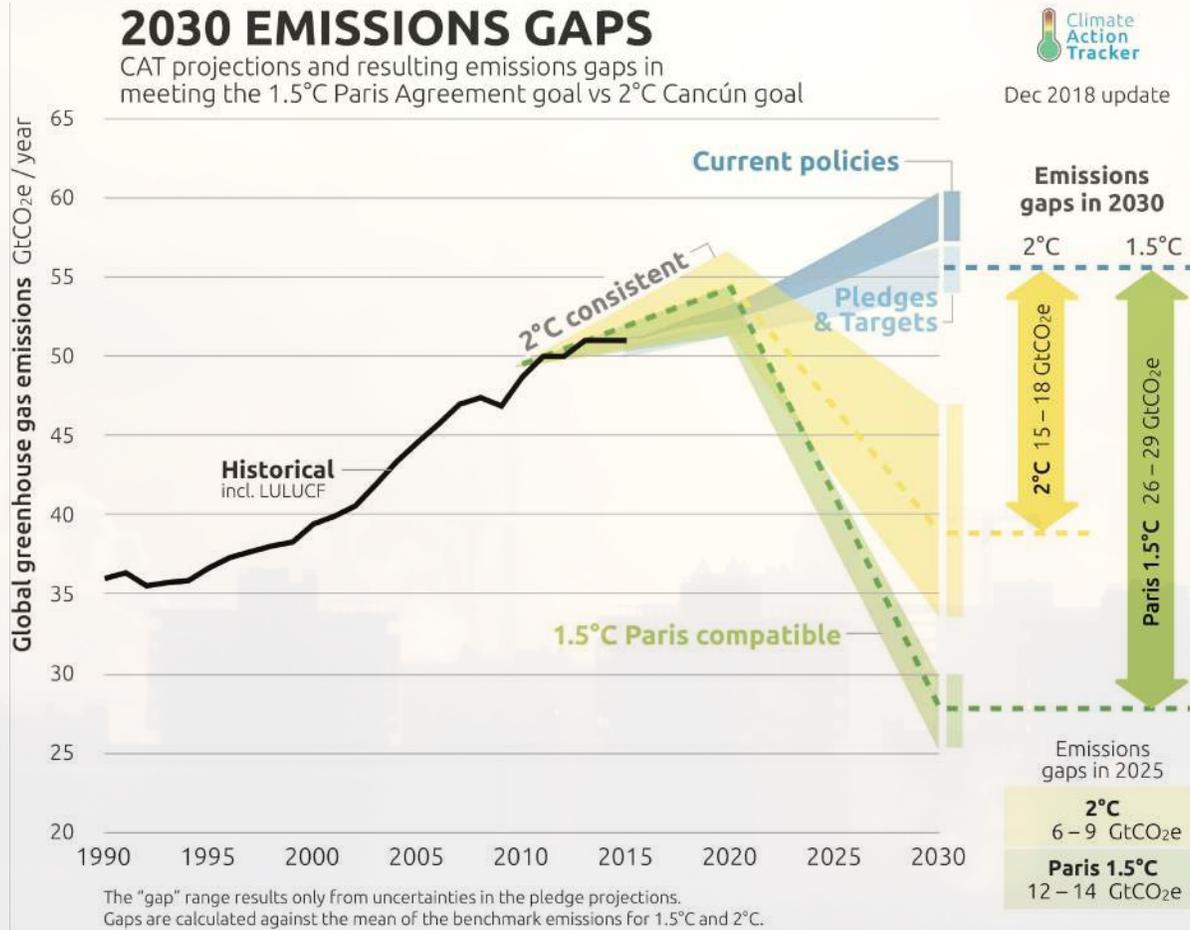
Top five global risks in 2020:

- Extreme weather events
- Failure of climate-change mitigation and adaptation
- Biodiversity loss and ecosystem collapse
- Natural disasters
- Man-made environmental disasters

The climate risks rank above data fraud, state collapse or crisis, energy price shocks and critical information infrastructure breakdown.



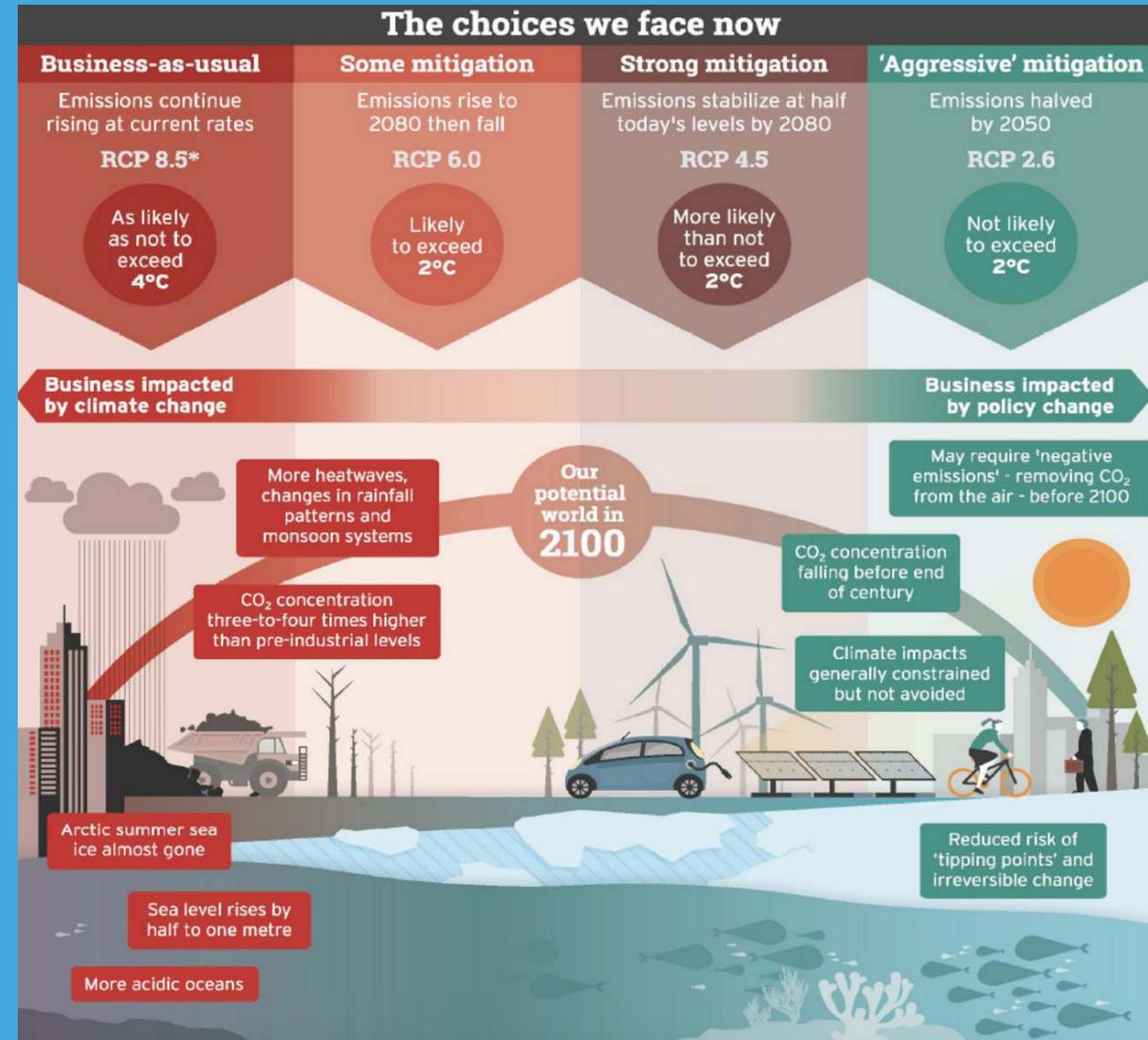
Paris Agreement goals



- Limit warming to well below 2°C above pre-industrial levels and pursue efforts to limit increase to 1.5°C
- Decarbonization of economy in second half of century
- Five-year review of country-specific progress on emission pledges (National Determined Contributions)



Climate change will bring both physical and policy risks, creating disruption



Source: Technical Supplement: The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities, TCFD, 2017

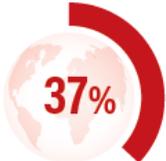


IPCC 1.5°C Special Report

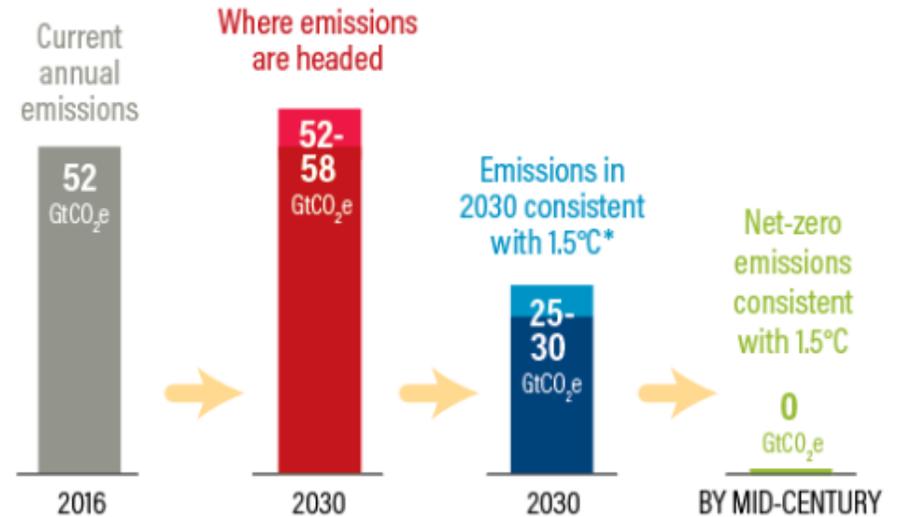
WORLD RESOURCES INSTITUTE

HALF A DEGREE OF WARMING MAKES A BIG DIFFERENCE:

EXPLAINING IPCC'S 1.5°C SPECIAL REPORT

	1.5°C	2°C	2°C IMPACTS
EXTREME HEAT Global population exposed to severe heat at least once every five years	 14%	 37%	2.6x WORSE
SEA-ICE-FREE ARCTIC Number of ice-free summers	 AT LEAST 1 EVERY 100 YEARS	 AT LEAST 1 EVERY 10 YEARS	10x WORSE
SEA LEVEL RISE Amount of sea level rise by 2100	 0.40 METERS	 0.46 METERS	.06M MORE

The World Is Not on Track to Limit Temperature Rise to 1.5°C



Notes: *on average, no or low overshoot.

WORLD RESOURCES INSTITUTE

“Every company, investor, & bank that screens new & existing investments for climate risk is simply being pragmatic.”

JIM YONG KIM, PRESIDENT OF THE WORLD BANK

“The combination of the weight of scientific evidence and the dynamics of the financial system suggest that, in the fullness of time, climate change will threaten financial resilience and longer-term prosperity.”

MARK CARNEY, GOVERNOR OF THE BANK OF ENGLAND

“Climate change is the greatest market failure the world has seen, and it interacts with other market imperfections.”

NICHOLAS STERN, ECONOMIST



TCFD launched 2015



Launched via G20's Financial Stability Board (FSB), the Task Force on Climate-related Financial Disclosures (TCFD) is becoming best practice for disclosing climate risk and opportunity

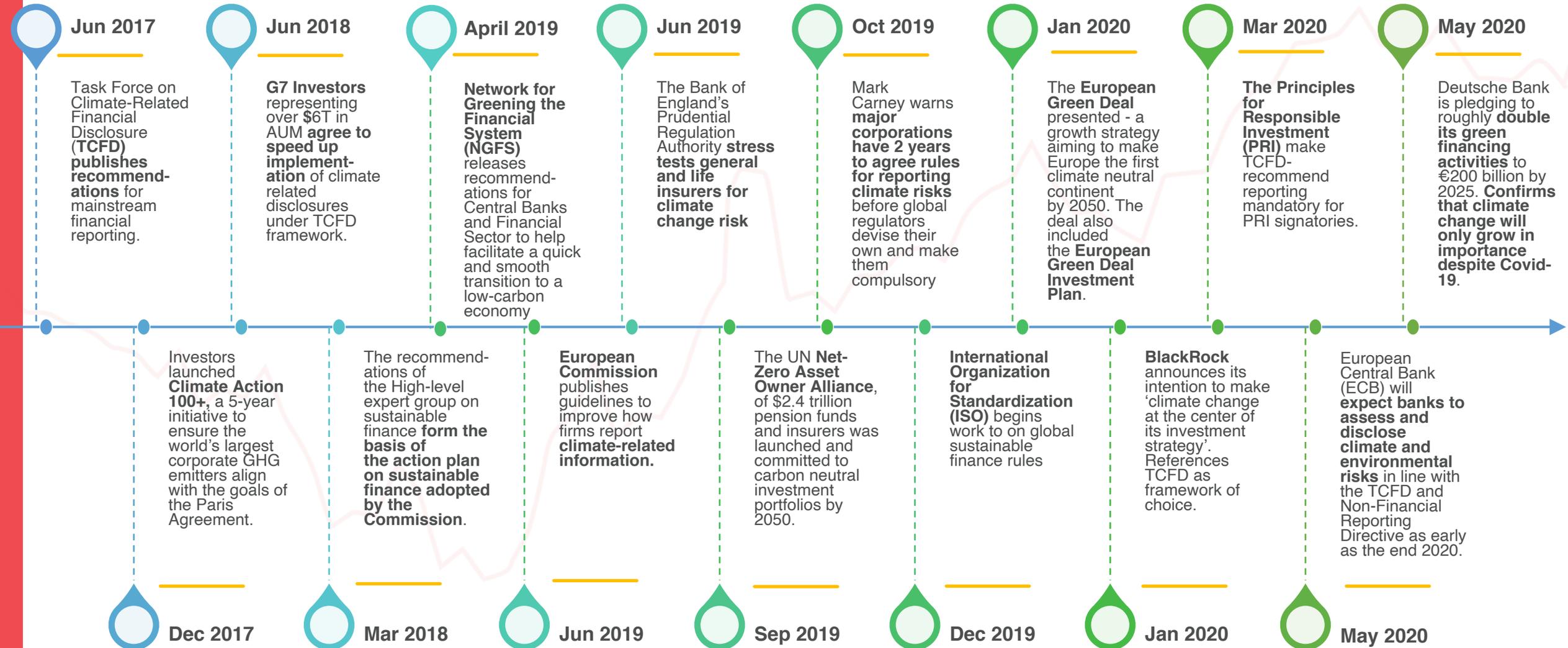
Asking: Will your house be left standing?



Russel King built this house to withstand 250 mph winds in Florida and it stands amidst ruined neighbours after Hurricane Michael.



Finance community reacting to climate change





Talking about the weather

Floods and storms are altering American attitudes to climate change

The Midwest is soaked and less sceptical



Increased pressure and scrutiny

Public

- Divestment movement has brought attention to this issue across the globe
- Public interest has fueled a shift in financial sector drivers: climate change is still about financial relevancy, but there is a space to look at a broader view of relevancy

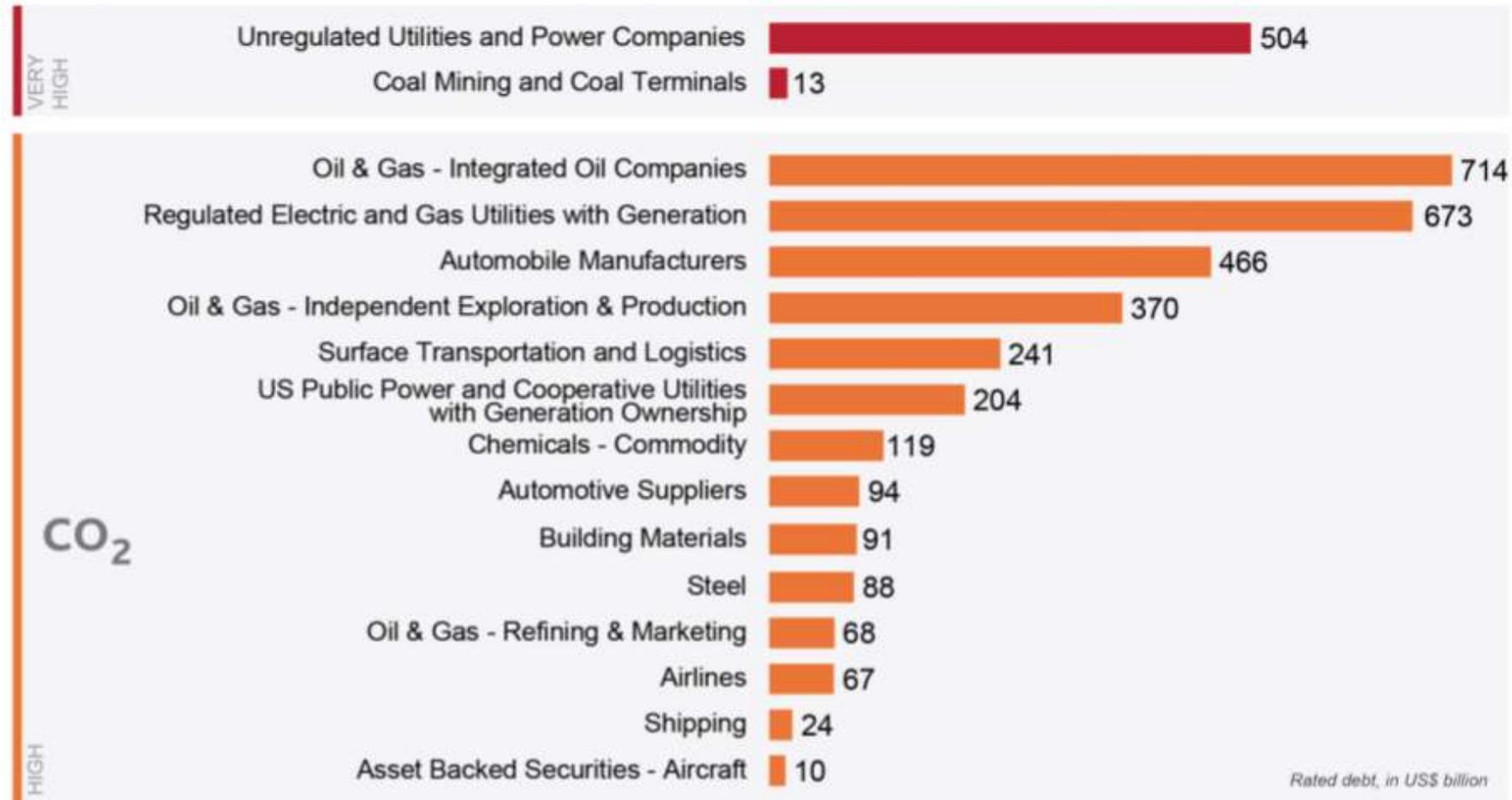
Legislation

- Governments consider how to incorporate into guidance and/or regulation
- France and the EU as a whole have moved the furthest on this, but guidance by regulators in other countries also exists



Moody's Incorporating climate risk into ratings

Sectors with "Very High" or "High" exposure to carbon regulation (in US\$ billion)



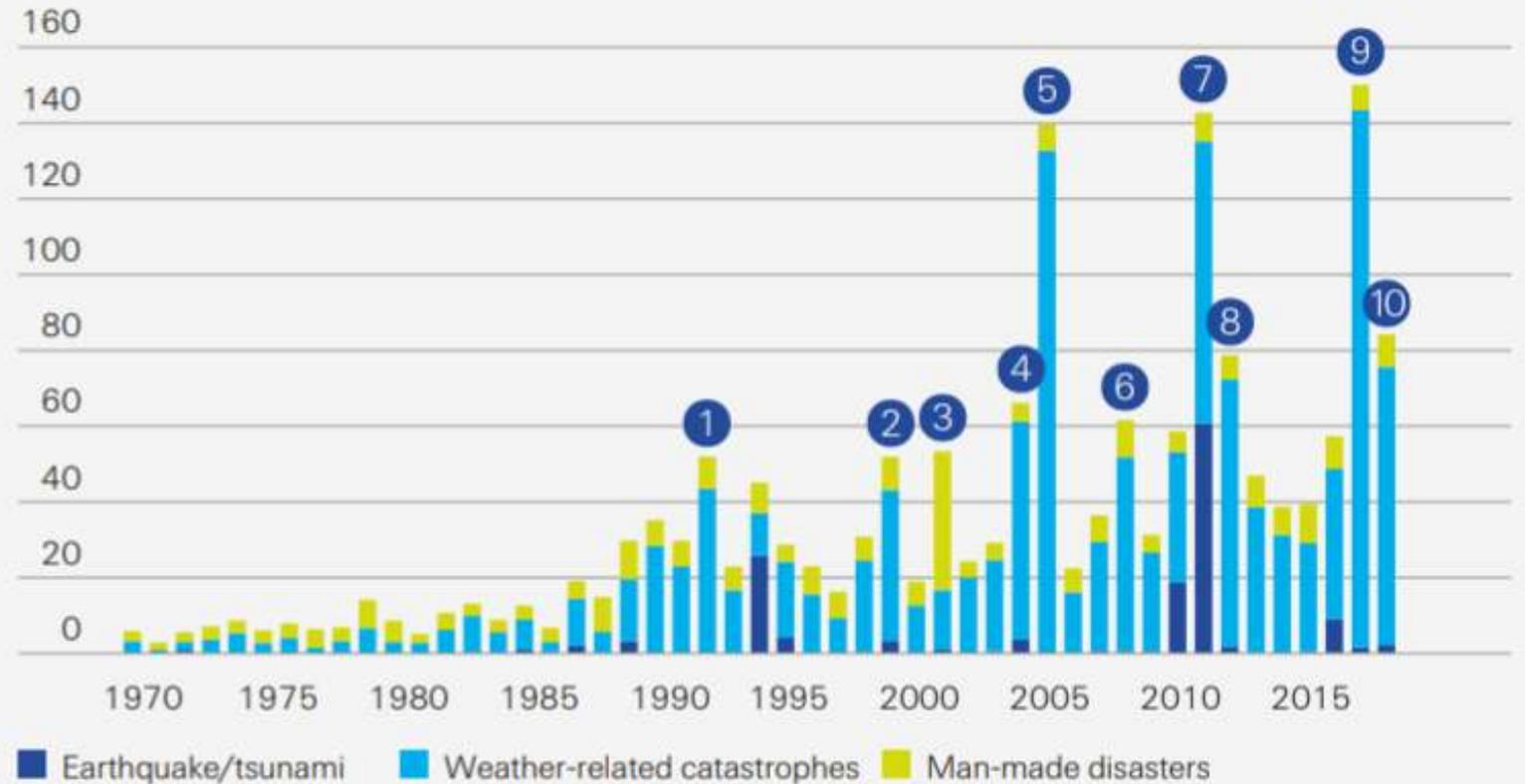
Rated debt, in US\$ billion

Insured losses: risks related to climate impacts

Figure 3

Insured catastrophe losses, 1970–2018 (USD billion, in 2018 prices)

1. Hurricane Andrew
2. Winter Storm Lothar
3. WTC
4. Hurricanes Ivan, Charley, Frances
5. Hurricanes Katrina, Rita, Wilma
6. Hurricanes Ike, Gustav
7. Japan, NZ earthquakes, Thailand flood
8. Hurricane Sandy
9. Hurricanes Harvey, Irma, Maria
10. Camp Fire, Typhoon Jebi

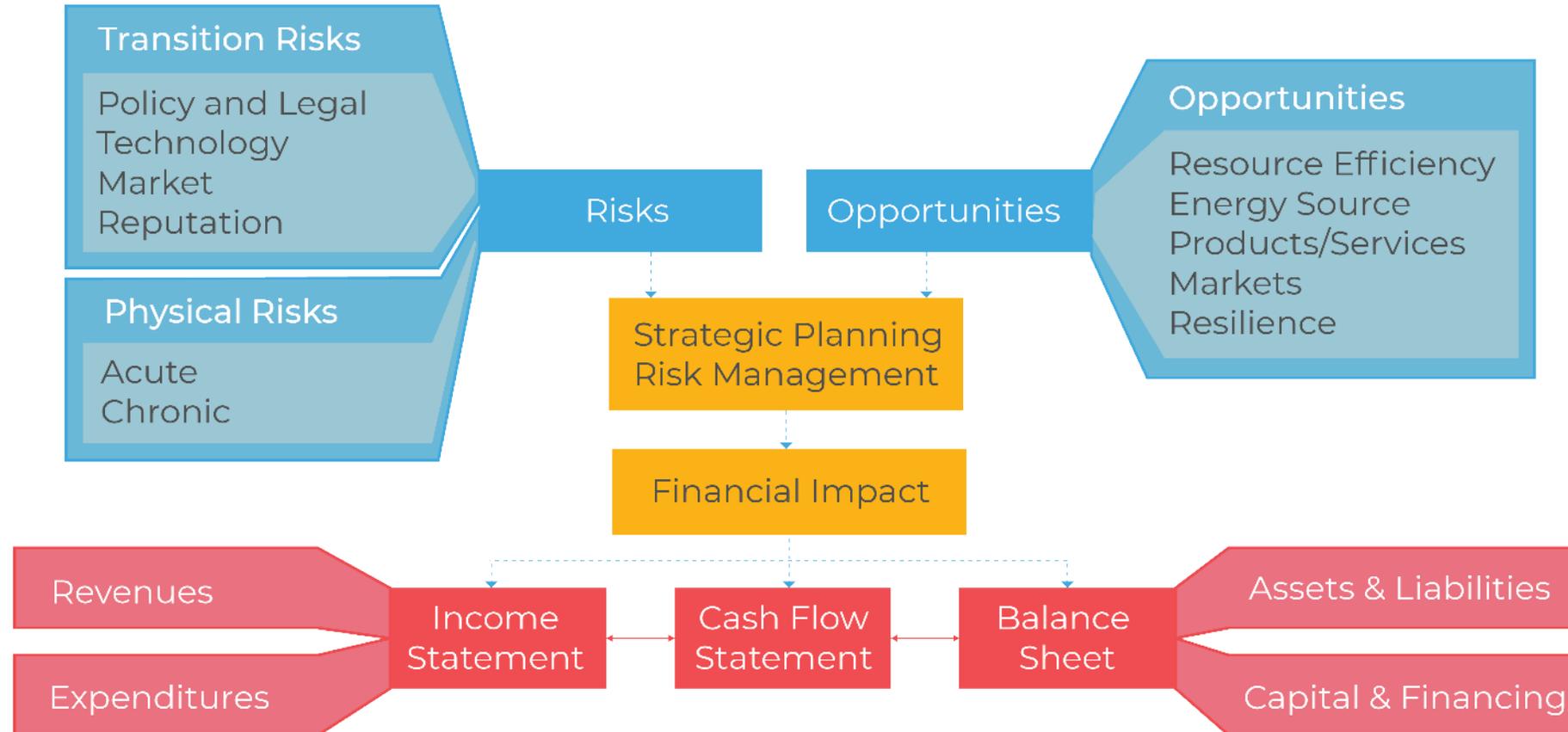


Source: Swiss Re Institute

Source: Swiss Re Institute Sigma No 2/2019: Natural catastrophes and man-made disasters in 2018: "secondary" perils on the frontline

Climate-related risks, opportunities, and financial impact

TCFD's categorization of climate-related risks and opportunities, and their financial impacts on an organization.



Source: TCFD Recommendations, June 2017, B Climate-Related Risks, Opportunities, and Financial Impacts, Figure 1

Key features of the TCFD recommendations

- Adoptable by all organizations
- Designed to solicit decision-useful, forward-looking information on financial impacts
- Brings the “future” nature of issues into the present through scenario analysis
- Strong focus on risks and opportunities related to the transition to a lower-carbon economy

- TCFD Recommendations are quickly becoming widely recognized as the best practice for climate-related disclosure
- The implementation will require ongoing leadership and support from public and private organisations, and is likely to take time (approximately 5 years)

Source: Status Report: Recommendations of the Task Force on Climate-related Financial Disclosures, TCFD 2018, p 16.



TCFD recommendations released June 2017

- Four thematic areas, with recommended disclosures under each
- Provides supplemental guidance for financial and select non-financial sectors on specific metrics and scenarios
- Integrate into mainstream financial filings
- Forward looking for resiliency under a 2-degree scenario

Governance

Disclose the organization'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 & Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

How to think about climate risk?



Physical

Acute Risk: Event-driven, including increased severity of extreme weather events

e.g. increased severity of extreme weather events such as cyclones and floods

Chronic: Longer-term shifts in climate patterns

e.g. changes in precipitation patterns and extreme variability in weather patterns, rising mean temperatures, rising sea levels



Transition

Policy and Legal: Exposure to climate-related policies and litigation or legal risk

e.g. increased pricing of GHG emissions, enhanced emissions-reporting obligations, exposure to litigation

Technology: Technological improvements or innovations that support the transition to a lower-carbon, energy-efficient economic system displaces old systems and disrupts some parts of the existing economic system

e.g. substitution of existing products and services with lower emissions options, costs to transition to lower emissions technology

Market: Shifts in supply and demand for certain commodities, products, and services as climate-related risks and opportunities are increasingly taken into account

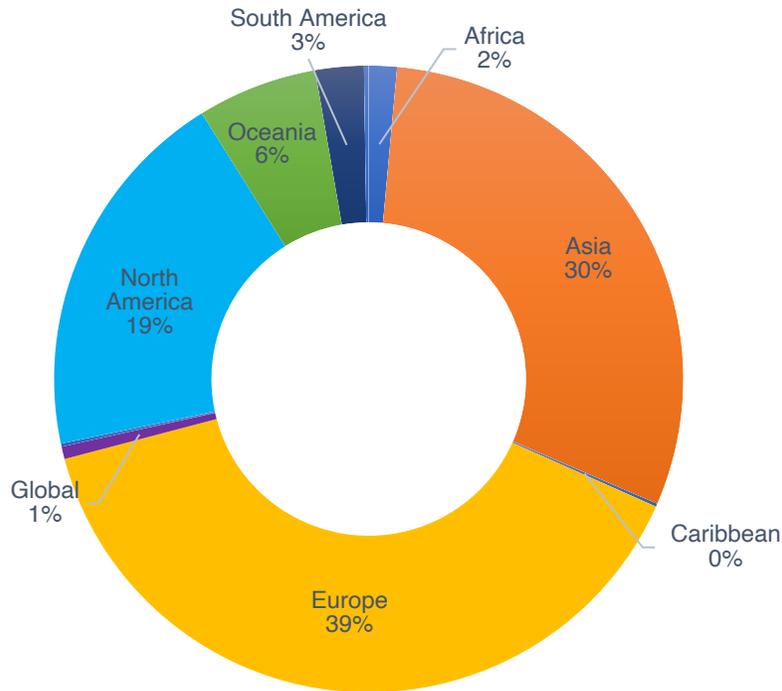
e.g. changing customer behavior, increased cost of raw materials

Reputation: Changing customer or community perceptions of an organization's contribution to or detraction from the transition to a lower-carbon economy

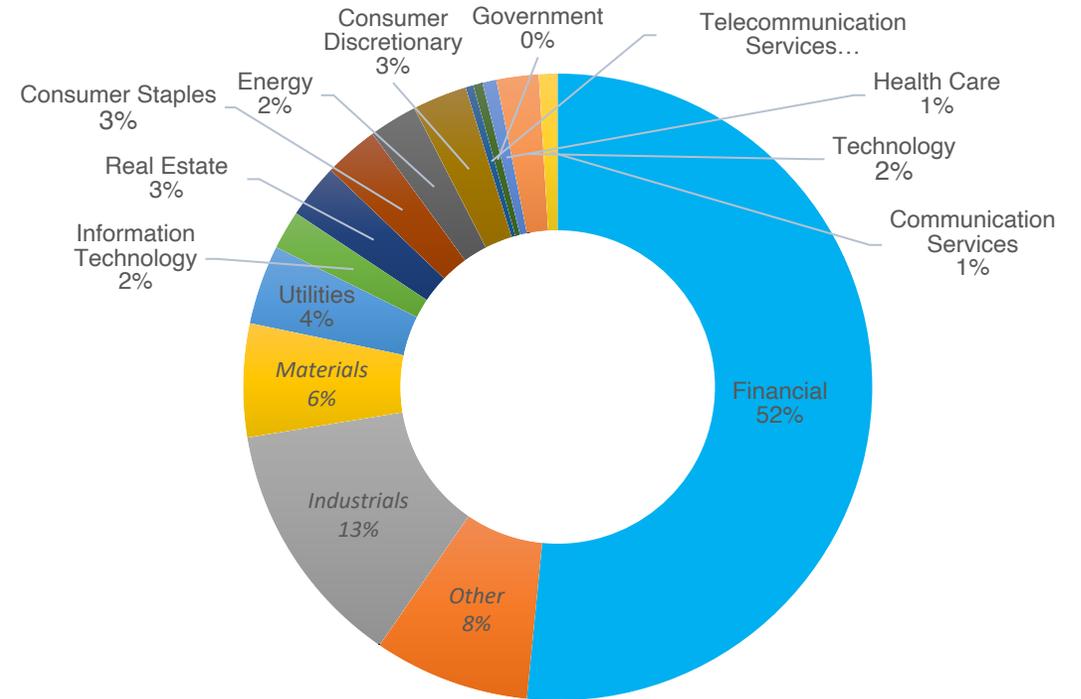
e.g. shifts in consumer preferences, increased stakeholder concern or negative stakeholder feedback

Support for the TCFD

Global TCFD Supporters by Region
1247 entities as of June 2020



Global TCFD Supporters by Industry



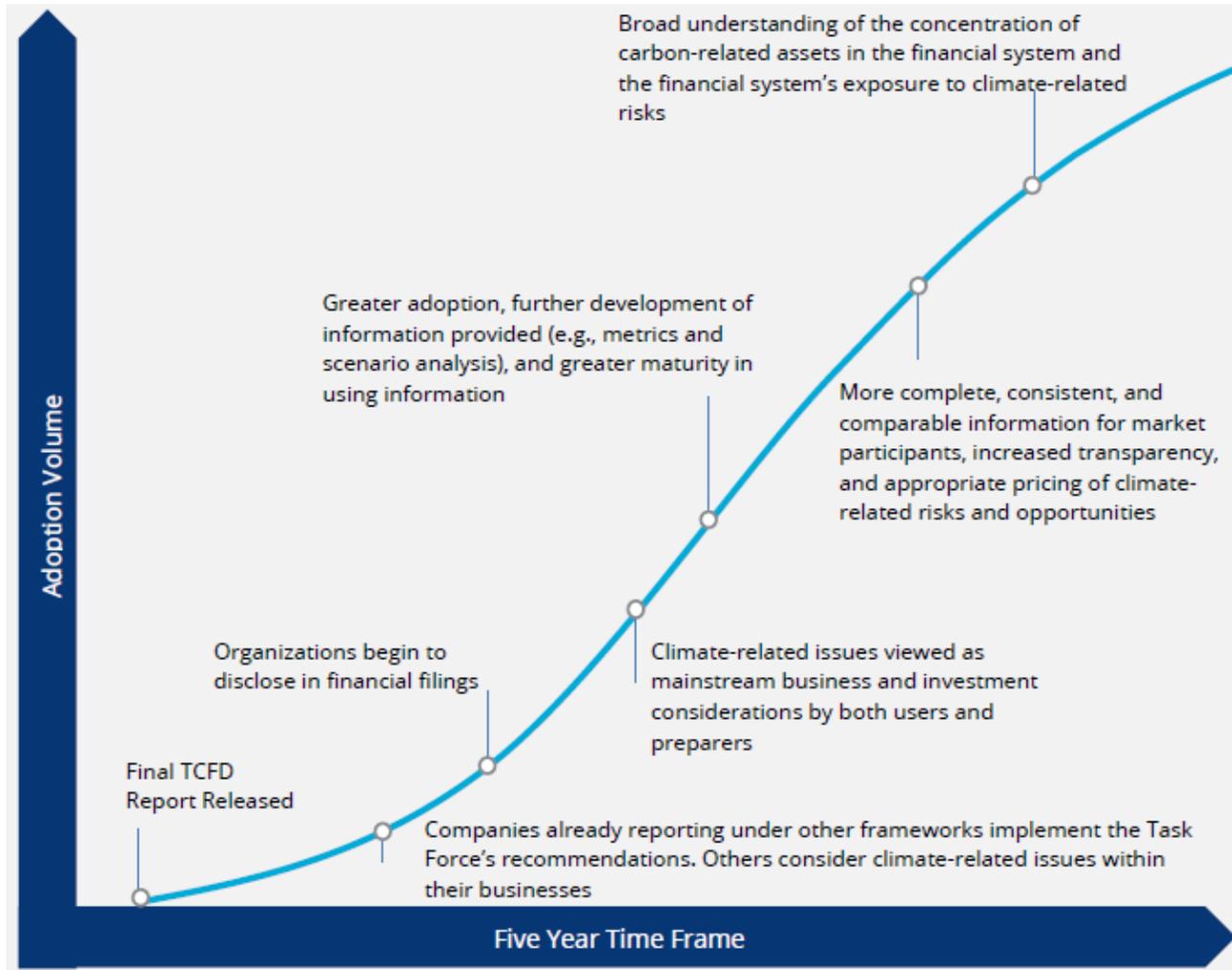
“The demand for TCFD disclosure is now enormous. Current supporters control balance sheets totalling \$120 trillion and include the world’s top banks, asset managers, pension funds, insurers, credit rating agencies, accounting firms and shareholder advisory services.”

Data Source: <https://www.fsb-tcfd.org/>

Mark Carney, October 2019



TCFD implementation path



Source: Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, TCFD 2017, p 42.

- The success of the Task Force's recommendations depend on near-term, widespread adoption
- Widespread adoption requires ongoing leadership from global governments and businesses
- Adoption of the recommendations can lead to financial risks and opportunities related to climate change becoming a natural part of an organization or government's risk management and strategic planning process



Status of TCFD reporting in Canada



Objective of the Study

This report is a follow-up to CPA Canada's 2016 study, [State of Play: Study of Climate-related Disclosures by Canadian Public Companies](#) (the 2016 Study).¹

Since the 2016 Study, the final recommendations of the [Task Force on Climate-related Financial Disclosures](#) (TCFD) were released,² and there has been increased momentum for the disclosure of climate-related issues in mainstream financial filings.

Demands by investors for better reporting on climate-change risks and opportunities have also prompted the Canadian Securities Administrators (CSA) to review disclosure practices and issue two staff notices (see sidebar).

The objective of this study (the 2019 Study) is to review climate-related disclosures made by leading Canadian public companies in their regulatory filings and assess the alignment of these disclosures with the TCFD Recommendations.

CSA staff notices on climate change-related disclosures

CSA Staff Notice 51-354 *Report on Climate Change-related Disclosure Project* (published April 2018) reported on findings of the CSA project that reviewed disclosure by reporting issuers of risks and financial impacts associated with climate change. The notice summarized the work completed, findings from the project, and recommended areas of future work.

CSA Staff Notice 51-358 *Reporting of Climate Change-related Risks* (published in August 2019) provided issuers with guidance on how they might approach preparing disclosures of material climate change-related risks. The notice does not create any new legal requirements or modify existing requirements. The notice reinforces and expands upon the guidance provided in CSA Staff Notice 51-333 *Environmental Reporting*.

The TCFD recommendations are quickly becoming best practice for climate-related disclosure. There are many good examples from global organizations that are starting to disclose in-line with the framework.

Recent disclosure reviews:

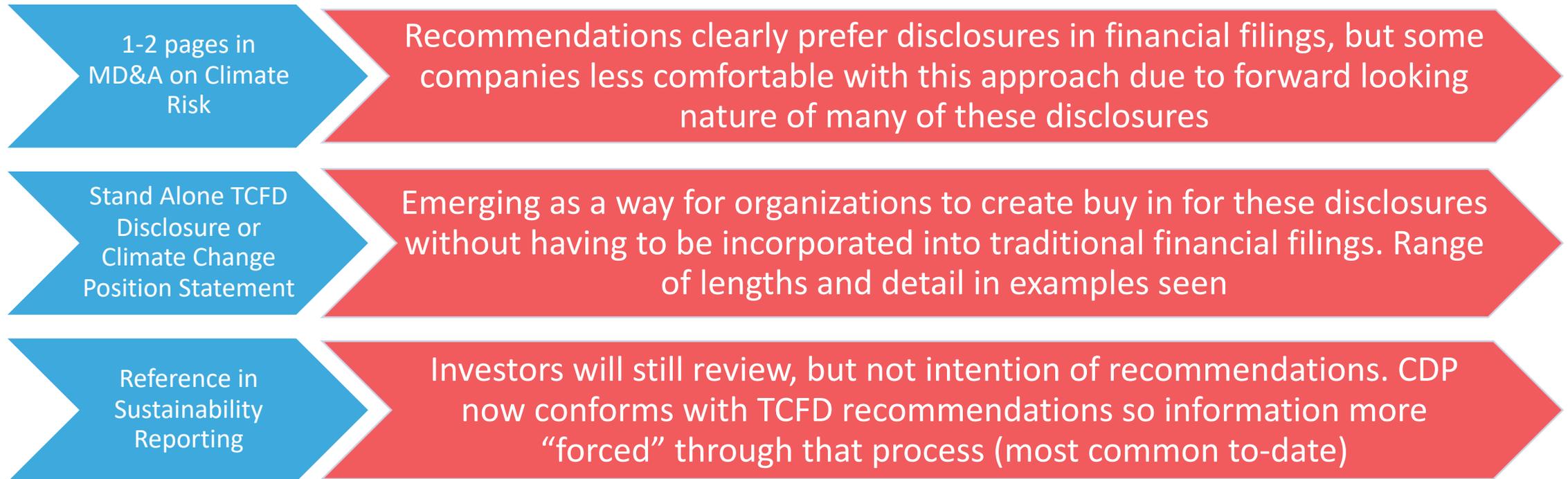
- Focused on review of public organizations across major global markets
- Reviewed for alignment of the disclosure to the TCFD Recommendations
- Took into account industry-specific considerations when evaluating climate-related disclosure

The CPA recently released the summary report for a Study of Climate-related Disclosures by Canadian Public Companies

The CPA study found that out of 40 TSX-listed companies:

- Only two companies disclosed the results of their scenario analysis
- Only one disclosed in all four TCFD-recommended categories, and 11 sub-categories

Range of approaches



TCFD – risk management

Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended Disclosures

- a) Describe the organization's processes for identifying and assessing climate-related risks.
- b) Describe the organization's processes for managing climate-related risks.
- c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.



Focus on the process

TCFD is asking for the disclosure of the process of identifying your climate-related risks and opportunities – you don't have to have all the answers – TCFD is looking for the story of how climate is being considered.

From CPA Canada study:

- About 50% of companies described processes for identifying, assessing and managing climate-related risk, but assessment specifics are lacking (<10% of companies)
- Only 20% described how they integrate into overall risk management

TCFD – strategy

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.

Recommended Disclosures

- a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.
- b) Describe the impact of climate-related risks and opportunities on the organization's business, strategy, and financial planning.
- c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.



#2

It's about risk and opportunity

TCFD is promoting an updated business strategy to address risks but to also help seize opportunities. This is about more than risk.



#3

Show me the money value

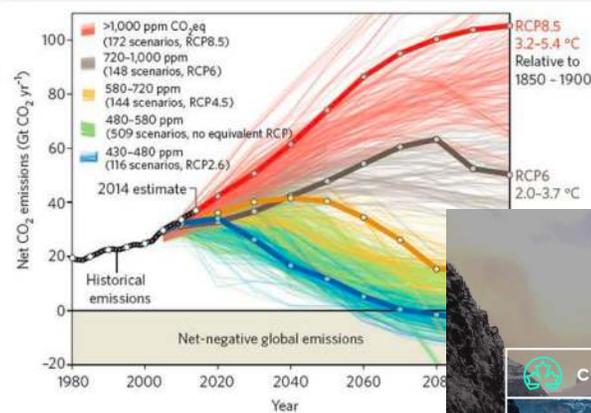
Not everything needs to be quantified, but the discussion of impacts should be linked to how it affects the business.

From CPA Canada study:

- Transition risks more prevalent than physical (70% vs 58%) and only 35% comment on time periods
- 5% described the application of climate scenarios
- 80% described the impact of climate-related risks and opportunities on the organization

Scenarios since CPA report

Figure A6
CO₂ Emissions Pathways and Temperature Outcomes in IPCC AR5 RCP Scenarios

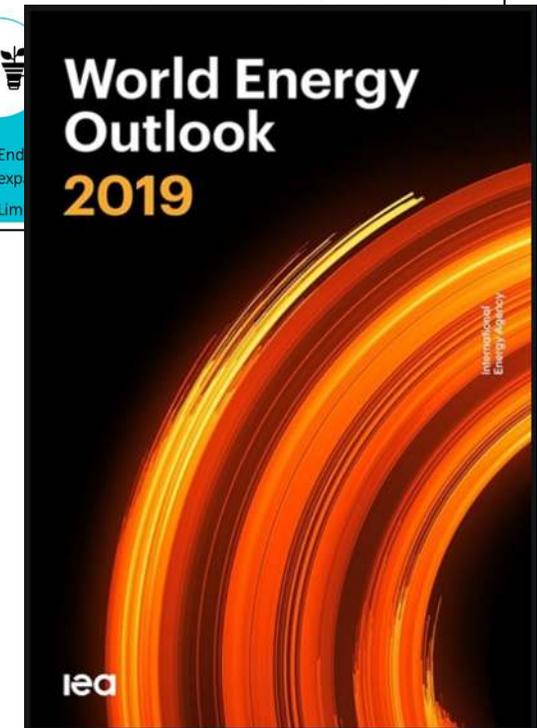


Source: Sabine Fuss, et al., "Betting on negative emissions," Nature Climate Change 4 (10)



Key policies we forecast are:

<p>Coal phase-outs Early coal phase-out for first mover countries by 2030</p> <ul style="list-style-type: none"> Steady decline of coal-fired power generation after 2030 <p><i>Germany currently envisages to phase-out coal only by 2038</i></p>	<p>ICE sales ban Early sales ban for first mover countries by 2035</p> <ul style="list-style-type: none"> Very low stock of ICE vehicles globally by 2050 <p><i>Electric vehicles currently represent less than 1% of all cars globally</i></p>	<p>Carbon pricing US\$40-60/tCO₂ prices by 2030 for first movers</p> <ul style="list-style-type: none"> Global convergence accelerated by BCAs to ≥\$100/tCO₂ by 2050 <p><i>The price of European Emissions Allowances today is ~€25/tCO₂ – and much lower in other regions</i></p>	<p>CCS and industry decarbonisation Limited CCS uptake to 2050</p> <ul style="list-style-type: none"> CCS primarily for industry and BECCS, with limited ramp-up of hydrogen for industry <p><i>The combined capture capacity of CCS power projects in operation at the end of 2018 was 2.4MtCO₂</i></p>
<p>Zero carbon power Significant ramp-up of renewable energy globally</p> <ul style="list-style-type: none"> Nuclear capacity increase in a small set of countries, nuclear fade-out elsewhere 	<p>Energy efficiency Increase in coverage and stringency</p> <ul style="list-style-type: none"> Performance standards, utility obligation programmes, financial and behavioural incentives 	<p>End of expansion</p> <ul style="list-style-type: none"> Limit 	



TCFD – metrics and targets

Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosures

- a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
- b) Disclose Scope 1, Scope 2, and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
- c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.



Metrics tail shouldn't wag the dog

Don't worry about getting the metrics and targets "correct" – it can be something that develops along with the strategy and framework.

From CPA Canada Study:

- 15% disclosed GHG emissions (mostly scope 1 and 2) in regulatory documents
- 30% described key climate-related targets

TCFD – governance

Governance

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

Recommended Disclosures

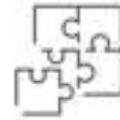
- a) Describe the board's oversight of climate-related risks and opportunities.
- b) Describe management's role in assessing and managing climate-related risks and opportunities.



#6

You've likely already started

Most well-run organizations are further ahead than they might think. You probably have about 40% of this stuff already, it's just not called "climate change."



#9

TCFD works internally too

Don't be afraid to use the TCFD framework to do internal work – you don't have to report it all publicly at once.

From CPA Canada Study:

- 48% described board's oversight of climate risk and opportunities with emphasis on communication details
- 35% described management's role in assessing and managing climate risks and opportunities with emphasis on assignment of roles

It starts with governance: climate-competent boards and executives

Key questions external stakeholders are asking:

1. What role are boards of directors playing in the oversight and management of climate-related risks and opportunities?
2. Who within the organization is responsible for climate strategy and has accountability?



Action steps to lay the groundwork for climate-related disclosures



#7

Tell your story

The use of disclosure information is evolving. Readers don't necessarily know what they are looking for and there are few "right answers." This is your chance to create your narrative.



#8

Disclosure shouldn't drive strategy

Having a climate strategy will help with smart and useful disclosure, but disclosure in and of itself is not sufficient.



#10

Get started

Don't let perfection be the enemy of getting started. Focus on a few key issues and aim to improve your TCFD implementation over time.

Source: SASB and CDSB: TCFD Implementation Guide 2019, p 7.

Mantle314's top 10 TCFD takeaways

 **#1** Focus on the process
TCFD is asking for the disclosure of the process of identifying your climate-related risks and opportunities – you don't have to have all the answers – TCFD is looking for the story of how climate is being considered.

 **#2** It's about risk and opportunity
TCFD is promoting an updated business strategy to address risks but to also help seize opportunities. This is about more than risk.

 **#3** Show me the money value
Not everything needs to be quantified, but the discussion of impacts should be linked to how it affects the business.

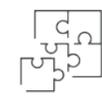
 **#4** Metrics tail shouldn't wag the dog
Don't worry about getting the metrics and targets "correct" – it can be something that develops along with the strategy and framework.

 **#5** Scenarios don't have to be scary
Scenario analysis can be high level and qualitative and still be effective for TCFD implementation. It's about how your organization fits into a climate-adjusted future.

 **#6** You've likely already started
Most well-run organizations are further ahead than they might think. You probably have about 40% of this stuff already, it's just not called "climate change."

 **#7** Tell your story
The use of disclosure information is evolving. Readers don't necessarily know what they are looking for and there are few "right answers." This is your chance to create your narrative.

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Having a climate strategy will help with smart and useful disclosure, but disclosure in and of itself is not sufficient.

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We look forward to helping your company gain competitive advantage as we transition to a climate-resilient economy.

Our team of climate professionals brings interdisciplinary expertise to help address your climate change-related challenges.

Want hands-on help with your TCFD reporting?

Let's chat!

1.888.664.7723
1255 Bay Street
Suite 801 | Toronto
info@mantle314.com