Background on the TCFD

**What is the TCFD?**
- Task Force formed in 2015 by the G20’s Financial Stability Board (FSB) leading up to the Paris Agreement
- Task Force co-chaired by former Mayor Michael Bloomberg
- Members of the taskforce are investors, preparers of disclosure, and rating agencies

**What is the Task Force’s goal?**
- The FSB recognized growing risk from climate change to the financial sector to the tune of trillions of dollars
- Investors need a disclosure framework that informs on climate risks to investees, allowing for informed capital allocation decisions

**What did they produce?**
- TCFD final recommendations released 2017
- Recommendations outline a voluntary framework for climate-related disclosure that includes governance, strategy, risk management, metrics and targets

*The TCFD recommendations aim to provide disclosures that are:*
- Relevant, specific, complete, clear, balanced, understandable, consistent, comparable, reliable, verifiable, objective, timely;
- Forward looking; and
- Decision-useful
2017 Final Report: Recommendations of the TCFD

“With better information as a foundation, we can build a virtuous circle of better understanding of tomorrow’s risks, better pricing for investors, better decisions by policymakers, and a smoother transition to a lower-carbon economy.”

Mark Carney, Chair of the G20 Financial Stability Board
The Increasing Value of the TCFD Recommendations

Implementing the TCFD recommendations effectively and equitably can be a vehicle for organizational change management and “mainstreaming” climate change.

- Global best practice for climate risk management and disclosure for accountability and action
- Created by investors to allow for greater transparency around climate risk, enable decision-useful information for investors
- Designed to allow institutions, corporates, and their stakeholders to understand climate risks and opportunities – ultimately tied to financial indicators
- Explores forward-looking physical and transition risks and opportunities
The TCFD Recommendations

<table>
<thead>
<tr>
<th>Governance</th>
<th>Strategy</th>
<th>Risk Management</th>
<th>Metrics and Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disclose the organization’s governance around climate-related risks and opportunities.</td>
<td>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.</td>
<td>Disclose how the organization identifies, assesses, and manages climate-related risks.</td>
<td>Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.</td>
</tr>
<tr>
<td>a) Describe the board’s oversight of climate-related risks and opportunities.</td>
<td>a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.</td>
<td>a) Describe the organization’s processes for identifying and assessing climate-related risks.</td>
<td>a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.</td>
</tr>
<tr>
<td>b) Describe management’s role in assessing and managing climate-related risks and opportunities.</td>
<td>b) Describe the impact of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning.</td>
<td>b) Describe the organization’s processes for managing climate-related risks.</td>
<td>b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.</td>
</tr>
<tr>
<td>c) Describe the resilience of the organization’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.</td>
<td>c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization’s overall risk management.</td>
<td>c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</td>
<td></td>
</tr>
</tbody>
</table>
Climate-related Risks, Opportunities, and Financial Impact

Source: TCFD 2021 Implementing Guidance, 2021
Climate Scenarios

2100 WARMING PROJECTIONS
Emissions and expected warming based on pledges and current policies

Sept 2019 update

Warming projected by 2100

Baseline
4.1 – 4.8°C

Current policies
3.0 – 3.4°C

Optimistic policies
2.9°C

Pledges & Targets
2.6 – 2.9°C

2°C consistent
1.6 – 1.7°C

1.5°C consistent
1.3°C

Global greenhouse gas emissions GtCO₂e/year

Historical

1990 2000 2010 2020 2030 2040 2050 2060 2070 2080 2090 2100


<table>
<thead>
<tr>
<th>1.5°C</th>
<th>2°C</th>
<th>2°C IMPACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXTREME HEAT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Global population exposed to severe heat at least once every five years |
| 14% | 37% | 2.6x WORSE |
| SEA LEVEL RISE |
Amount of sea level rise by 2000 |
| 0.40 METERS | 0.46 METERS | .06m MORE |
| ECOSYSTEMS |
Amount of Earth’s land area where ecosystems will shift to a new biome |
| 7% | 13% | 1.86x WORSE |
| CORAL REEFS |
Further decline in coral reefs |
| 70–90% | 99% | UP TO 29% WORSE |
Scenario Analysis

Scenario analysis is a tool to explore forward-looking potential physical and transition risks and opportunities

**1.5°C warming**
- Less physical risk
- More transition risk
- More transition opportunity

**4°C warming**
- More physical risk
- Less transition risk

- Large, rapid GHG emission reductions
- Mitigated, but not eliminated, physical risks
- Carbon pricing
- Disruption from the transition to renewable energy and less energy intensive options

- GHG emissions continue to rise
- Very slow transition to low-carbon economy
- Damage to assets and infrastructure
- Productivity loss
- Economic losses from strong climate impacts
Implementing the TCFD Recommendations

Assess Value

- Develop a gap analysis of existing processes, data and disclosure

Create an internal working group

Enhance Value

- Conduct scenario analysis and understand potential futures

Integrate climate-related information into decision-making (begin mainstreaming)

Create Value

- Embed climate-related risks and opportunities into risk management and decision-making processes (mainstream), and appropriately disclose this to the market

Source: TCFD 2021 Implementing Guidance, 2021
**Adaptation Planning**
Actions to manage the physical impacts of climate change

- Flood or Fire Protection
- Natural Infrastructure Investments
- Infrastructure and Building Design and Upgrades
- Cooling Centers
- Business Continuity Planning

**Transition Planning**
Actions to reduce emissions that cause climate change

- Sustainable Transportation
- Combined Heat and Power
- Energy Efficiency
- Carbon Sinks
- Renewable Energy
- Urban Forests
- Water and Energy Conservation
- Community Building
- Sustainable Transportation
- Combined Heat and Power
- Energy Efficiency
- Carbon Sinks
- Renewable Energy
- Urban Forests
- Water and Energy Conservation
- Community Building
Examples of Corporate Adaptation and Resilience Initiatives

CEO Water Mandate (2000)

Water Stress