April 28, 2021
Online

Marquette University

CLIMATE CHANGE

What are the risks, realities and challenges?

TECHNOLOGY FOR IMPACT

01 WHERE ARE WE AND HOW WE GOT HERE

TECHNOLOGY FOR IMPACT

THE CLIMATE CHALLENGE...

TECHNOLOGY FOR IMPACT

PLANETARY BOUNDARIES HAVE BEEN DANGEROUSLY CROSSED

GLOBAL WARMING

We are emitting 55 billion tons of GHGs to the atmosphere every year.

These GHGs originate from five industries:

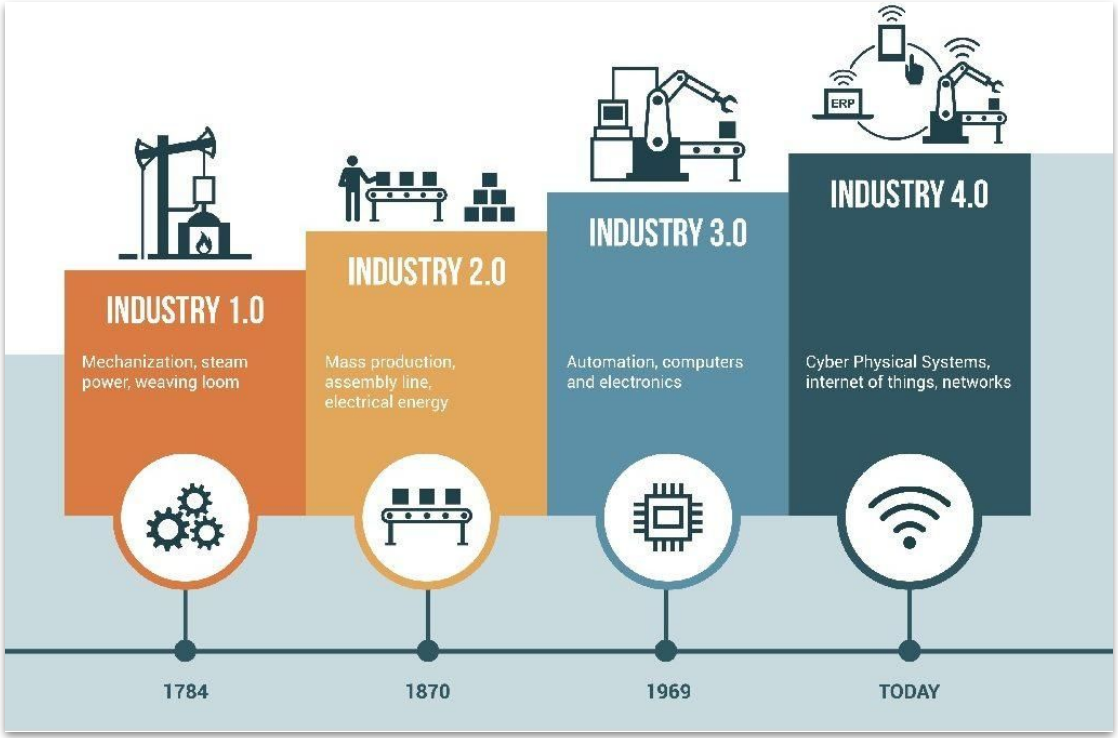
- -Energy
- -Transportation
- -Manufacturing
- -Building
- -Agriculture

BIODIVERSITY LOSS

We are losing natural ecosytems, flora & fauna at a very rapid rate.This loss is caused by five major activities:

- -Deforestation
- -Pollution
- -Overexploitation of natural resources
- -Urban growth
- -Anthropocentric planning

HOW WE GOT HERE



WHERE ARE WE TODAY?

‘Larry Fink, the FT, and Prince Charles are right: it’s time for a reset on capitalism’

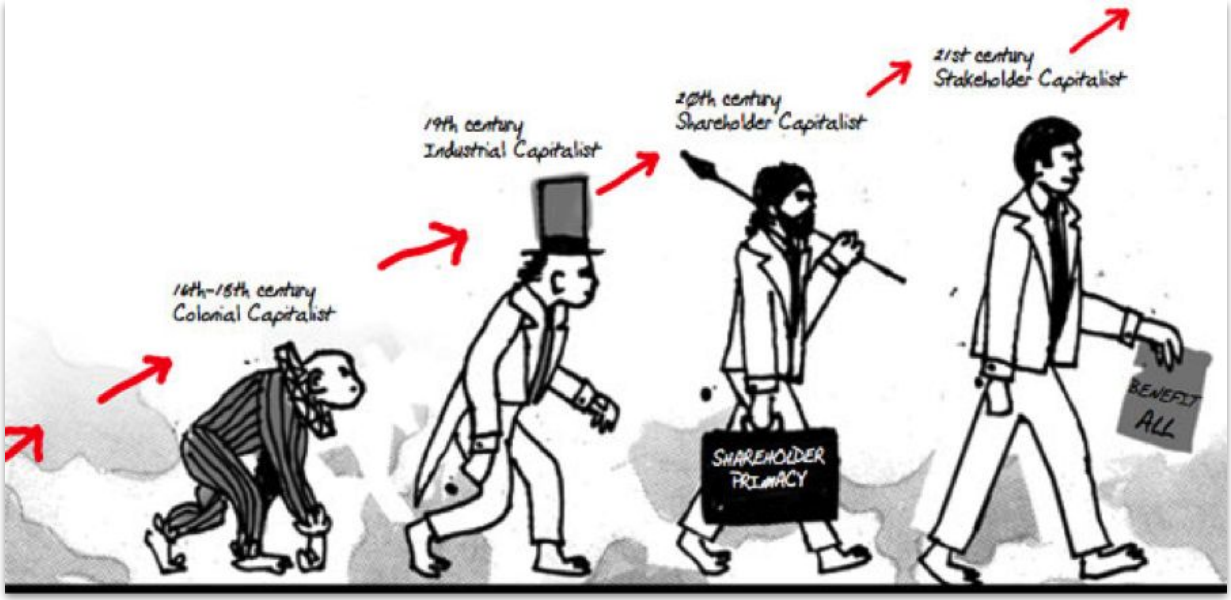
By David Grayson on Jan 27, 2020

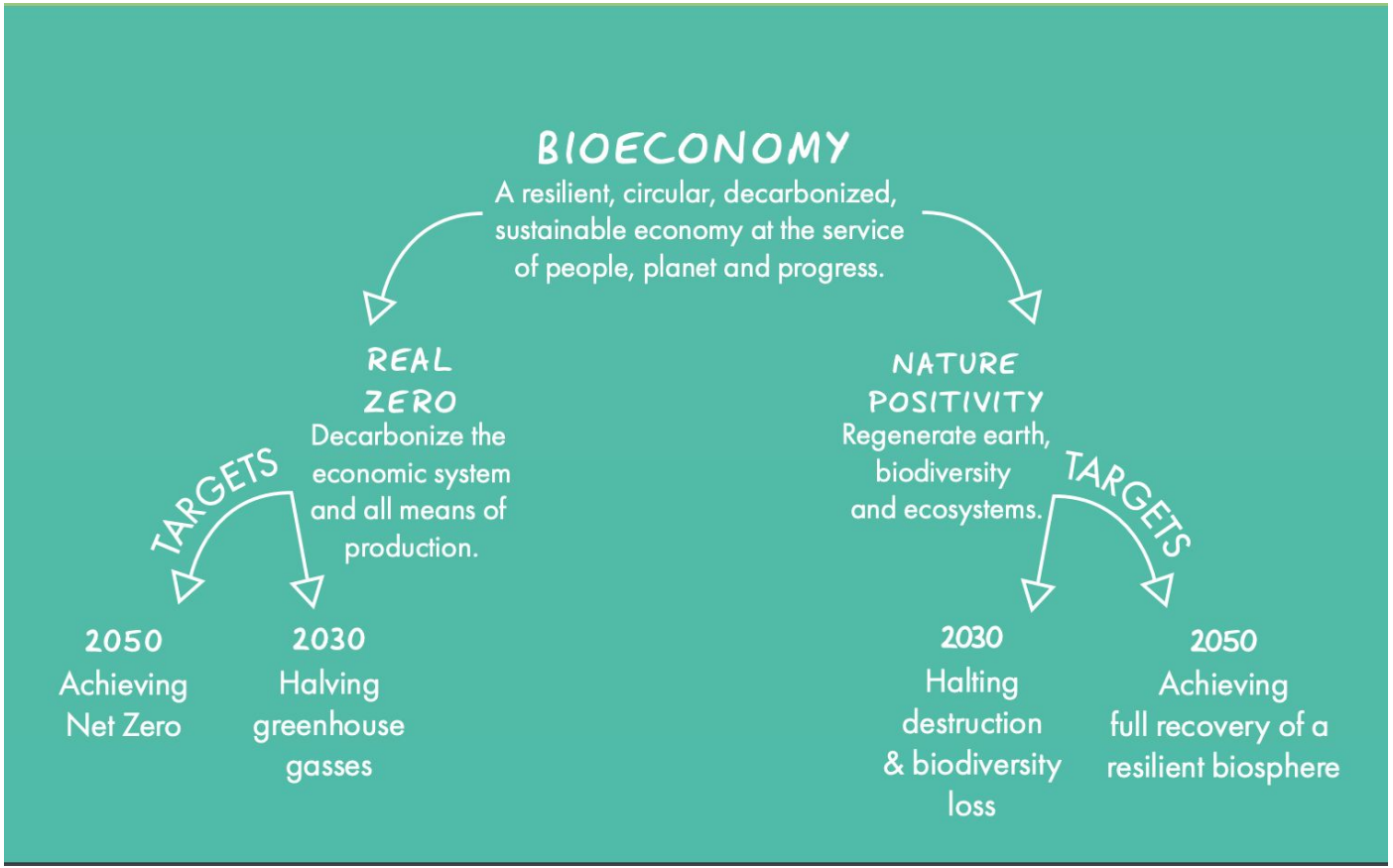
THE RACE TO NET-ZERO

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

...WHERE WE NEED TO GO

TECHNOLOGY FOR IMPACT




BIOECONOMY
A resilient, circular, decarbonized, sustainable economy at the service of people, planet and progress.
REAL ZERO
Decarbonize the economic system and all means of production.
TARGETS
2050
Achieving Net Zero
2030
Halving greenhouse gasses
NATURE POSITIVITY
Regenerate earth, biodiversity and ecosystems.
TARGETS
2030
Halting destruction & biodiversity loss
2050
Achieving full recovery of a resilient biosphere

The IPCC

Delayed action is a business risk. Companies that fail to take climate action soon are risking becoming unviable. As climate regulation is implemented, any business that is not taking action will begin to lose market share.

The IPCC (Intergovernmental Panel on Climate Change**)**
Created by the United Nations Environment Programme and the World Meteorological Organization in 1988.

- Scientific assessments on climate change
- Implications
- Potential future risks
- Adaptation
- Mitigation options

The most recent IPCC report "Code Red for Humanity".
- Limit global warming to 1.5°C
- Get to net-zero by 2030
- Divest from coal and fossil fuels

United Nations | Meetings Coverage and Press Releases

Home | Secretary-General | General Assembly | Security Council | Economic and Social Council

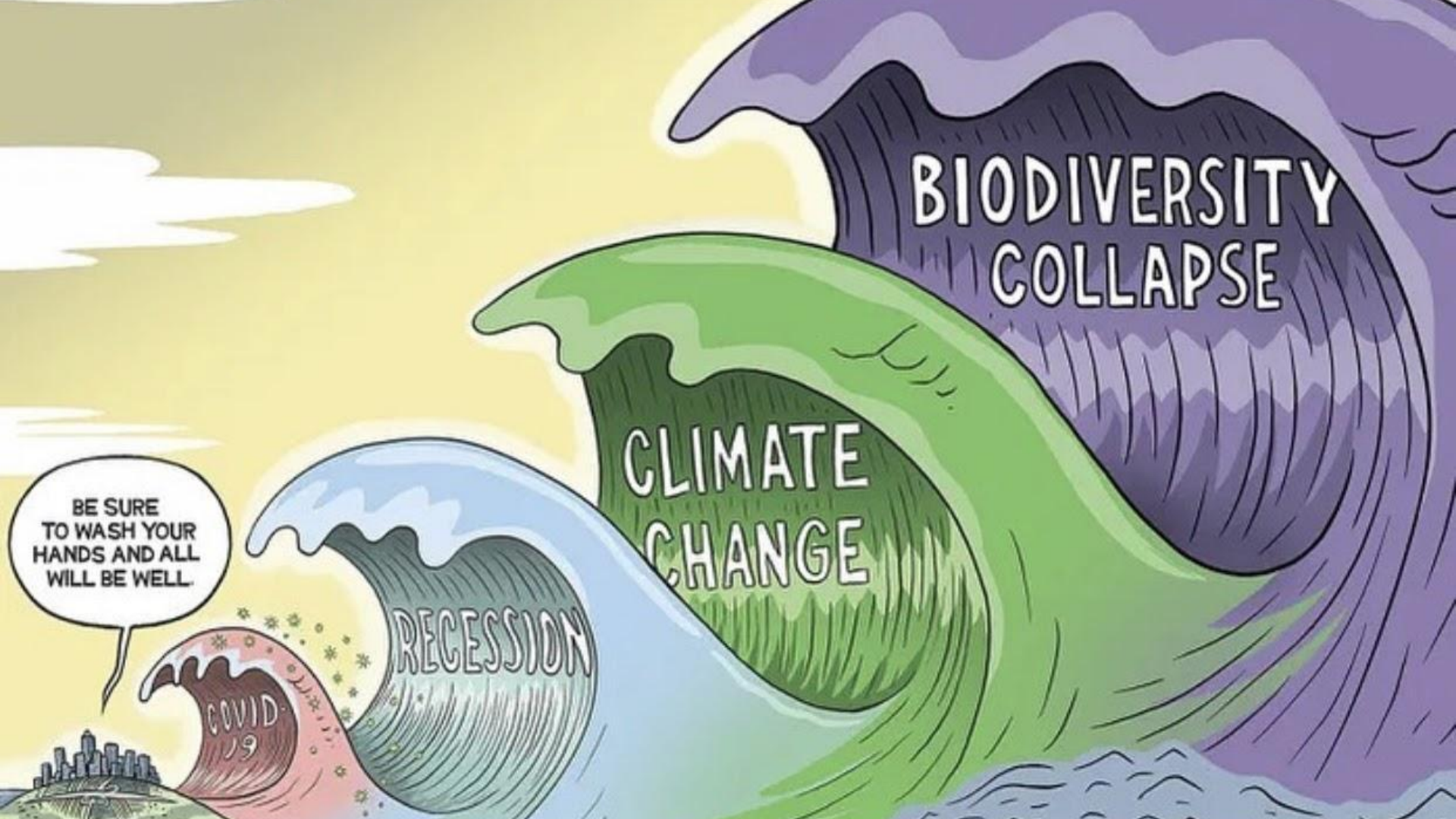
PRESS RELEASE

SECRETARY-GENERAL » STATEMENTS AND MESSAGES

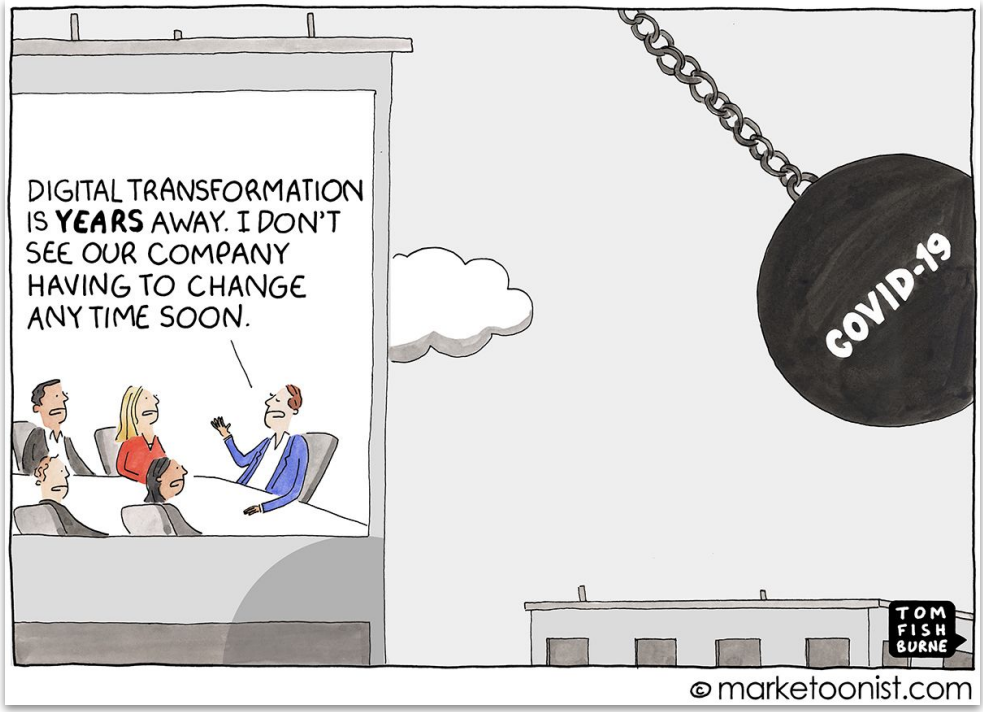
Secretary-General Calls Latest IPCC Climate Report 'Code Red for Humanity', Stressing 'Irrefutable' Evidence of Human Influence

IPCC (2021) IPCC circulates final draft of Working Group II report to governments for comment.
U.S Securities and Exchange Commission (2021) The Securities and Exchange Commission's Division of Examinations .
United Nations (2021) Secretary-General Calls Latest IPCC Climate Report 'Code Red for Humanity', Stressing 'Irrefutable' Evidence of Human Influence.

TECHNOLOGY FOR IMPACT


BE SURE TO WASH YOUR HANDS AND ALL WILL BE WELL.
COVID 19
RECESSION
CLIMATE CHANGE
BIODIVERSITY COLLAPSE

LESSONS FROM THE PAST YEARS



02 BANKING AND NET-ZERO

TECHNOLOGY FOR IMPACT

The New York Times

Climate Change Could Blow Up the Economy. Banks Aren't Ready.

Like other central banks, the E.C.B., which met on Thursday, is scrambling to prepare for what a report warns could be a coming economic upheaval.

STOP BANKS FUNDING CLIMATE CHAOS

J.P.Morgan

The banking industry has been criticized for contributing to the climate crisis by providing financing to the oil and gas sector. JPMorgan is the No. 1 arranger of bonds for fossil-fuel companies this year according to data compiled by Bloomberg.

Bloomberg, JPMorgan Joins Net-Zero Bank Alliance With Emissions Pledge Tim Quinson (2021)

The SEC

The SEC (Securities and Exchange Commission) Responsible for:

- The SEC is developing rulemaking proposal for mandatory climate risk disclosure as to public issuers
- The SEC will also evaluate potential ESG misconduct

AMERICAN BANKER

LEADERS POLICY & REGULATION COMMUNITY BANKING CREDIT UNIONS MORE

RISK MANAGEMENT

Why SEC's climate disclosure rules could hit banks hardest

By Neil Haggerty July 02, 2021, 3:00 a.m. EDT 6 Min Read

"While many bankers have been willing to work with the SEC as it develops a framework for companies to reveal their contributions and exposure to climate change, they are concerned that the agency may request data that will be too difficult for the industry to collect, measure and report."

U.S Securities and Exchange Commission (2021) The Securities and Exchange Commission's Division of Examinations .
Investopedia (2020) Securities and Exchange Commission (SEC).
American Banker (2021) Why SEC's climate disclosure rules could hit banks hardest.

The Net-zero Banking Alliance

The Net-Zero Banking Alliance brings together banks worldwide representing over a third of global banking assets, which are committed to aligning their lending and investment portfolios with net-zero emissions by 2050.

- 91 banks from 36 countries, totaling more than $65 trillion in total assets
- **Reaching a net-zero economy is the greatest solution to reduce the risks of climate change to the financial system's and macroeconomic stability.**

The Grantham Research Institute, Net-zero central banking: A new phase in greening the financial system (2021)

The TCFD

The Task Force on Climate-Related Financial Disclosures (TCFD) was created in 2015 by the Financial Stability Board (FSB) to develop consistent climate-related financial risk disclosures for use by companies, banks, and investors in providing information to stakeholders.

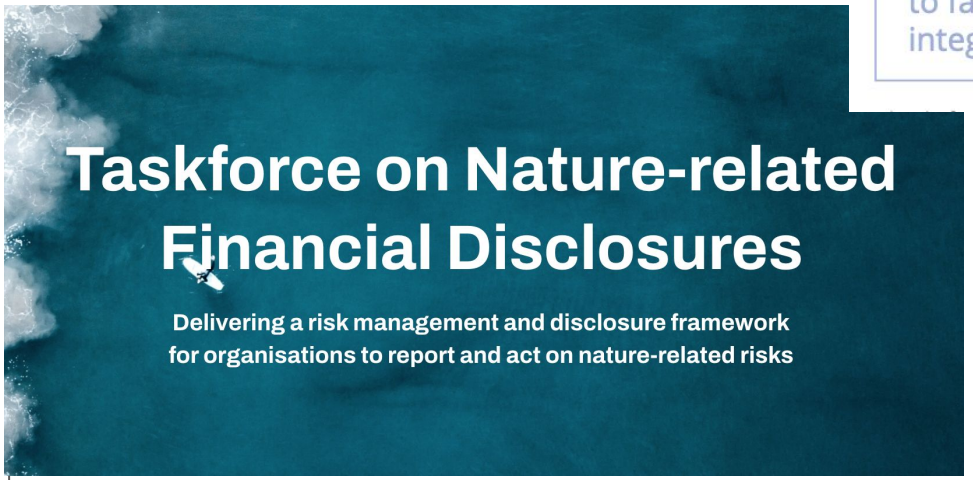
The taskforce designed standardized guidelines to help organizations disclose material climate risks, explain their plans to manage exposure, and describe how the shift to a zero-carbon economy would affect their operations. **Governments around the world are pushing for mandatory Climate-Risk Reporting.**

TECHNOLOGY FOR IMPACT

The TNFD

The Task Force on Nature-Related Financial Disclosures formally launched to widespread support from financial institutions, corporates, governments and civil society. The G7 Finance Ministers and G20 Sustainable Finance Roadmap have endorsed the TNFD.

By aligning the TNFD's recommended disclosures closely to those of the TCFD, the TNFD intends to facilitate and encourage a move towards integrated disclosures.



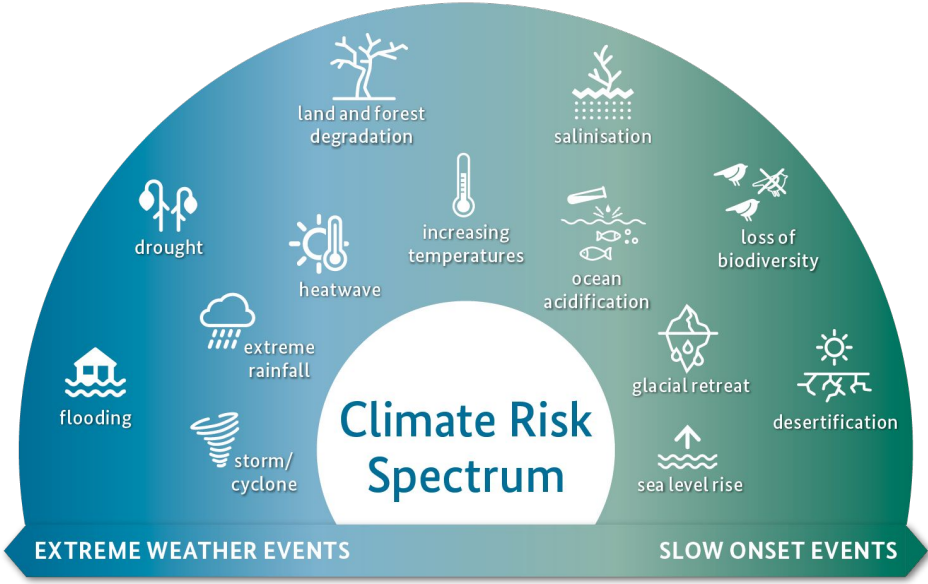
TECHNOLOGY FOR IMPACT

Climate risk reporting (CRR)

Physical Risks:

Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns.

- **Acute Risk,** refer to those that are event-driven, including increased severity of extreme weather events, such as cyclones, hurricanes, or floods.
- **Chronic Risk,** refer to longer-term shifts in climate patterns (e.g., sustained higher temperatures) that may cause sea level rise or chronic heat waves.



Transition Risks:

Transitioning to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change.

- **Policy and Legal Risks**
- **Technology Risk**
- **Market Risk**
- **Reputation Risk**

TECHNOLOGY FOR IMPACT

Key elements of ESG

The ESG contains three key elements, each containing a wide range of useful topics.

Environmental pillar

- Climate change
- Natural resources
- Pollution & waste
- Environment opportunity
- Carbon emissions
- Water stress
- Toxic emissions & waste
- Oportunities in clean tech
- Product carbon footprint
- Biodiversity & land use
- Packaging material & waste
- Oportunities in green building
- Financing environmental Impact
- Raw material sourcing
- Electronic waste
- Oportunities in renewable energy
- Climate change vulnerability

Social pillar

- Human capital
- Product liability
- Stakeholder opposition
- Social opportunity
- Labor management
- Product safety & quality
- Controversial sourc-ing
- Access to communication
- Health & safety
- Chemical safety
- Access to finance
- Human capital development
- Financial product safety
- Access to health care
- Supply chain labor standards
- Privacy & and data security
- Oportunities in nutrition & health
- Responsible investment
- Health & demo. risk

Governance pillar

- Corporate governance
- Corporate behavior
- Board divesity
- Business ethics
- Executive pay
- Anti-competitive practices
- Ownership
- Corruption & instability
- Accounting
- Financial system Instability
- Tax Transparency

The PRI

PRI: Principles for responsible investment is a UN supported network.

The PRI considers (ESG) issues.

Since 2020, PRI signatories have been required to report risks and opportunities related to climate.

The financial system is not operating sustainably and the PRI is working to realign the system with sustainable, equitable economies.

Principles for Responsible Investment (2021) Investment mandates: Embedding ESG factors, improving sustainability outcomes.

TECHNOLOGY FOR IMPACT

Benefits

Benefits of better disclosure

Risk assessment

More effectively evaluate climate-related risks to your company, its suppliers, and competitors.

Capital allocation

Make better-informed decisions on where and when to allocate your capital.

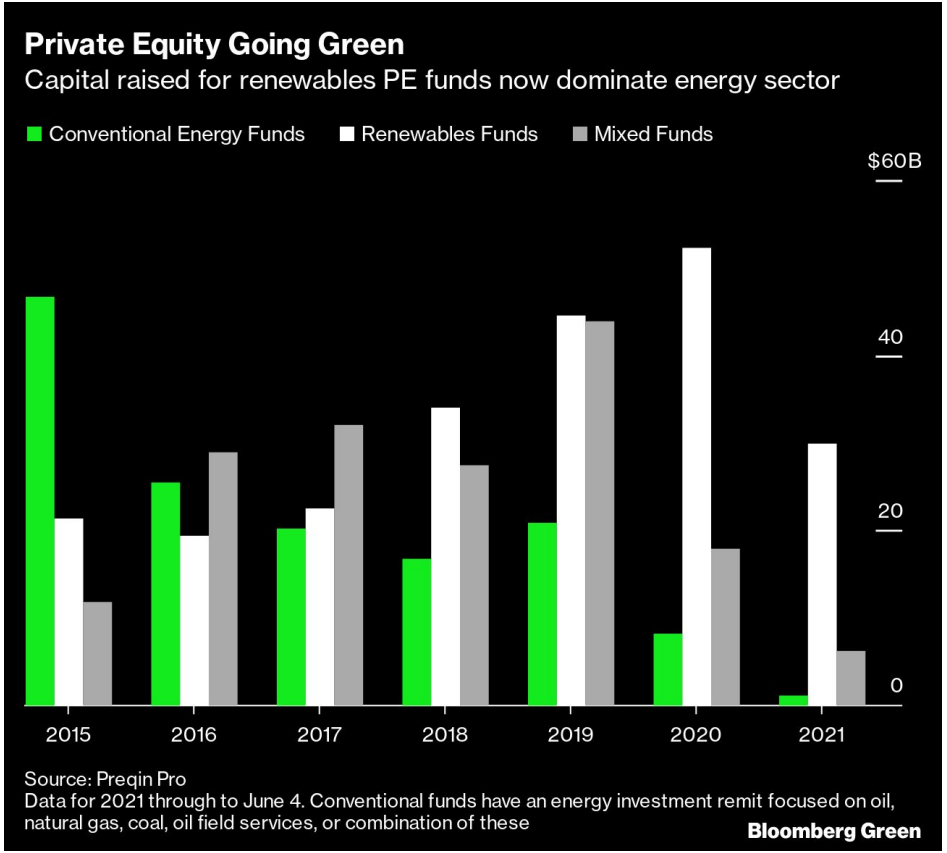
Strategic planning

Better evaluate risks and exposures over the short, medium, and long term.

Investors

Investors have started to move their portfolios away from high-polluting companies following new climate regulation. Consequently, there is currently an influx of capital looking for green business to invest in.

Greenfield FDI (foreign direct investment) in renewable energy totaled $85.5 billion globally in 2020, hitting new highs and **eclipsing FDI in fossil fuels for the first time.**



Harvard Business Review (2019) The Investor Revolution.
EY building a better working world (2020) Why investors are putting sustainability at the top of the agenda.
World Bank Blog (2021) Global investors shift focus to sustainability amid push for a green recovery.

Sustainable finance

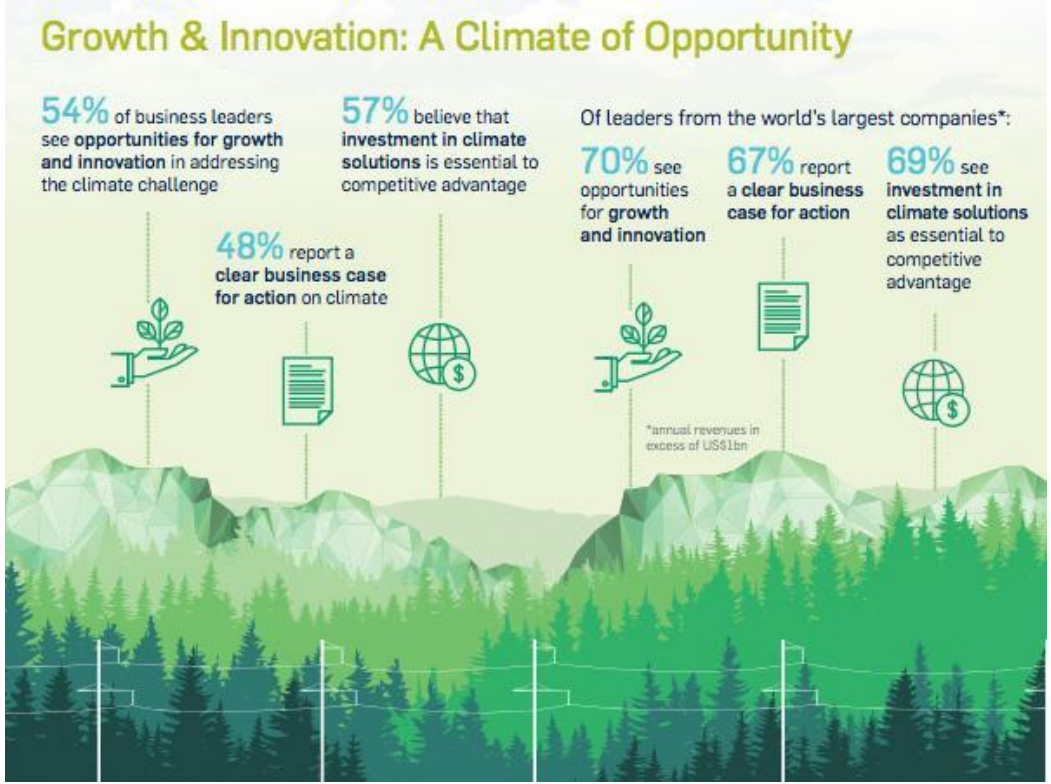
U.S. assets under management applying ESG strategies grew to $17.1 trillion at the beginning of 2020.

That's a 42% increase from $12 trillion at the beginning of 2018.

NerdWallet (2021) Environmental, Social and Governance (ESG) Investing and How to Get Started.

03 WHAT THE MARKET DEMANDS

Happy clients, happy planet: the financial benefits of complying



iNews

Consumers want to live eco-friendly lives, but they need more help from government and business

Consumers want businesses to improve the availability of sustainable products and make them more affordable – and government and business must...

Hace 3 semanas

-55% of global consumers are willing to pay more for products and services provided by sustainable companies

-The millennials make consumer decisions based on sustainability actions (millennials are the largest generation)

TECHNOLOGY FOR IMPACT

FROM GLOBAL TRENDS TO LOCAL IMPLEMENTATION

Climate migration

Intersectional environmentalism

Reforestation

Deplastification

Impact investing

Blue economy

Natural capital

finance

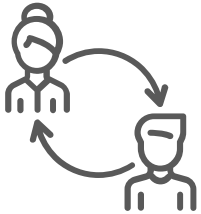
MORE BENEFITS

Meeting public expectations

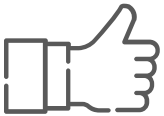
Avoiding bad news

Complying with regulations

Boosting the business



Recruiting and motivating employees



Rewarding for good behaviour

HOW ARE OTHERS DOING IT?

Around the world

Switzerland:

In August 2021, the Swiss Federal Council instructed the Federal Department of Finance to prepare a consultation draft for mandatory climate reporting based on the TCFD by summer 2022.

United Kingdom:

In November 2020, the UK's Chancellor of the Exchequer announced the UK's intention to mandate climate disclosures by large companies and financial institutions by 2025. In December 2020, the Financial Conduct Authority introduced new rules for companies with a UK premium listing to disclose climate related risks and opportunities in line with the TCFD recommendations on a comply or explain basis.

Around the world

The UK and New Zealand governments have announced the obligation of climate-related reporting for:
-Large insurers
-Banks
-Listed companies
-Listed issuers
-Investment managers

New Zealand is a world-leader in this area and the first country in the world to introduce mandatory climate-related reporting for the financial sector. **The US is expected to follow suit this year.**

UK and NZ lead way on mandatory climate risk disclosures

The Guardian (2021) New Zealand becomes first country to force finance companies to act on climate risks.

REUTERS

World Business Markets Breakingviews Video More

ENVIRONMENT SEPTEMBER 23, 2019 / 7:08 AM / UPDATED 2 YEARS AGO

Pension funds and insurers pledge climate action at U.N. summit

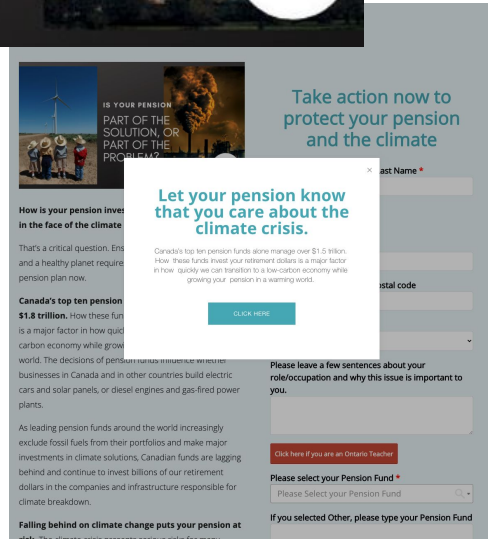
By Matthew Green 4 MIN READ

Take Action Now with Shift

If you want your pension fund to protect your retirement savings and tackle the climate crisis, take action now. Shift Action provides the following tools to get you started. You don't have time to wait.

I want my pension money to be transitioned to fossil-free investments by fund managers. Our economic future is not in fossils. I want my pension money to tackle climate change and provide the financial stability that the the transition to a zero-carbon economy will bring.

Take Action Now



THE ACTION NETWORK

START ORGANIZING: ACTIONS PEOPLE SUPPORT

Join the Fire Your Fossil Bank Community

Fire Your Fossil Bank is a campaign to make Canadians aware that their bank is funding the climate crisis by financing fossil fuel expansion.

In Canada, our Big Five banks provide 70% of the money for Tar Sands expansion. Globally, they finance fossil fuels nearly half a trillion dollars (482 billion). By partnering with the fossils, our big banks are funders of climate change.

Use your money as a powerful weapon to pressure the big banks to do their share in the war on climate change. If enough of us move our money, we will force them to become responsible corporate citizens and align themselves with their clients rather than the fossils.

The number of **Sign-Ups** will tell us how many Canadians are looking for greener banking services. And we will keep you up to date on policy changes and steps your bank is taking to align itself with the goals of the Paris Agreement.

Please sign up and then send a personal letter to your branch manager and/or the President of your bank. Sample letters are available **here.**

You can find out more about Canada's Big Five banks **here,**

Perspectives

Climate risk and banking: What more should banks do?

QuickLook

As the costs of climate change continue rising, banks can help protect investments and clients by prioritizing climate risk management.

#FireYourFossilBank

When you're banking with one of Canada's Big Five—RBC, TD, Scotia, BMO, CIBC—your money is going into fossil fuels. And, your bank is a #fossilbank.

Press Release

Triodos Bank joins the Net-Zero Banking Alliance

TECHNOLOGY FOR IMPACT

Forbes

Nov 8, 2019, 04:01am EST | 17.664 views

Everyone Is Talking About ESG:What Is It And Why Should It Matter To You?

Tine Thygesen Former Contributor

Leadership Strategy

SUSTAINABLE DEVELOPMENT GOALS

ESG

2020 Is a 'Tipping Point' for ESG, Says Nasdaq CEO Adena Friedman

HSBC sounds alarm over investment in meat giant due to deforestation inaction

Bank argues JBS has 'no action plan' to tackle link between indirect suppliers and Amazon destruction following Guardian investigation

▲ JBS is the world's largest meat company, slaughtering over 35,000 cattle a day in Brazil alone. Photograph: Paulo Whitaker/Reuters

Mobile banking for a better future

Let your money be part of the solution. Open your sustainable Tomorrow account in only 8 minutes.

Get started

4.9★	74,000+	30m+	31.5m
6.000+ top app ratings	people of Tomorrow	trees protected	€ invested in sustainable projects

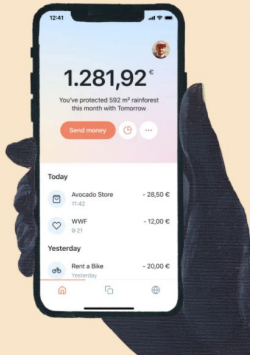
Conventional banks use your money to invest massively in coal power, weapons and other damaging industries – without ever asking your permission. We use your money exclusively to invest in sustainable projects.

How we create positive impact together →

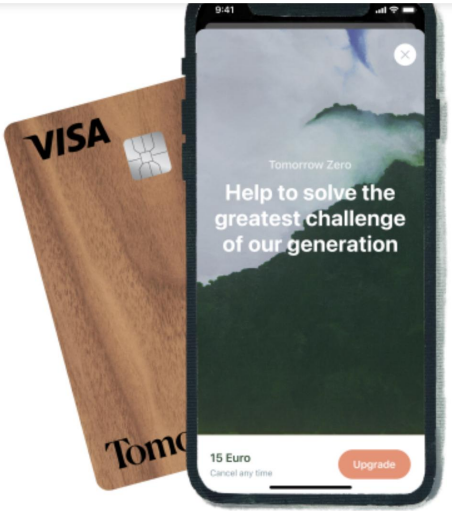
https://www.tomorrow.one/en-EU/

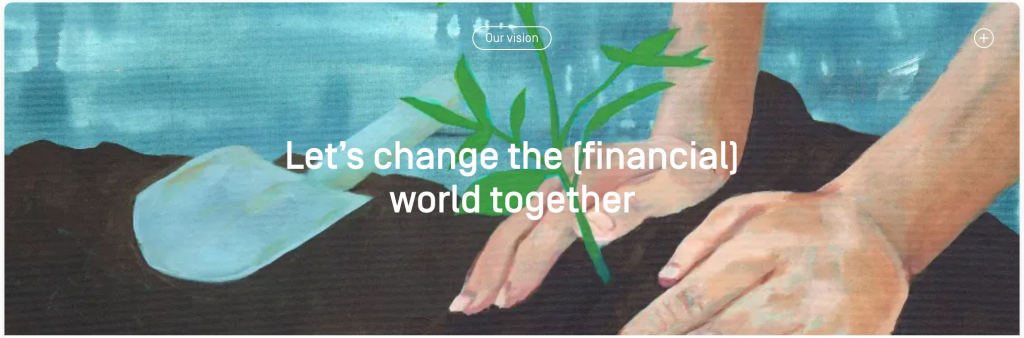
Tomorrow offers the comfort of digital banking – without compromising your values. We use smart technologies that make your daily life easier while contributing to a better future.

Sustainable banking for your smartphone →



Tomorrow





20 million euro in impact investments

70 million m² protected rainforest

1st worldwide climate-neutral bank account

Our wooden card is exclusively included in Tomorrow Zero – our premium account that offsets your CO_2 emissions. For 15 € a month you get unlimited mobile banking and climate protection in one.

GUEST COMMENTARY | OPINION

Even if deniers don't, Florida insurers recognize the cost of climate change | Invading Sea

By FRED GRIMM
SOUTH FLORIDA SUN SENTINEL | OCT 21, 2020 AT 12:00 PM

Financial Services
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In the transition to a green economy, the insurance industry can play a critical role in helping stakeholders manage risk.

Money
Mortgages | Insurance | Credit & Credit Cards | Loans | Investing & Banking

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RETIREMENT > LOOKING FORWARD

'We Will Miss the Warm Winters.' Retirees Are Fleeing Florida as Climate Change Threatens Their Financial Future

BY REBECCA MORDECHAI
MARCH 19, 2019

A car is seen in a flooded street as Hurricane Irma passes through on September 10, 2017 in Miami, Florida. Joe Raedle—Getty Images

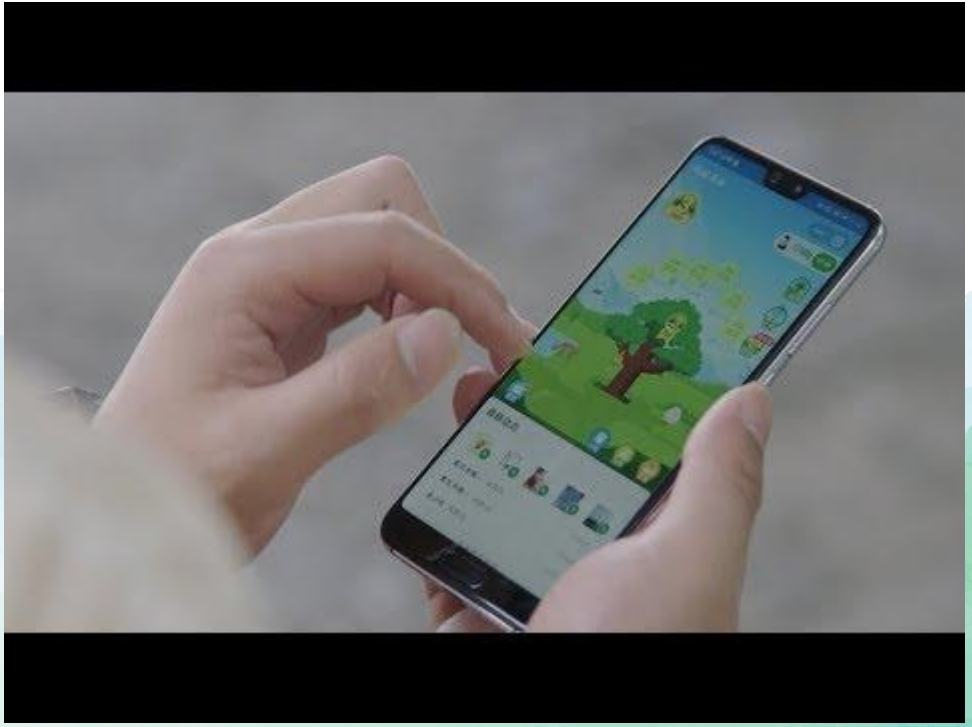
TECHNOLOGY FOR IMPACT

First GREEN Bank

a local bank with a global mission™

First GREEN Bank in Lake County, Florida, offers consumers and businesses low-interest loans for environmentally friendly development projects. While First GREEN is the only bank in Florida that specializes in this kind of lending, similar “green banks” have been established in New Jersey, New York, Rhode Island, and elsewhere across the U.S.

Bloomberg, JPMorgan Joins Net-Zero Bank Alliance With Emissions Pledge Tim Quinson (2021)



04 FUTURE-PROOFING YOUR BANK

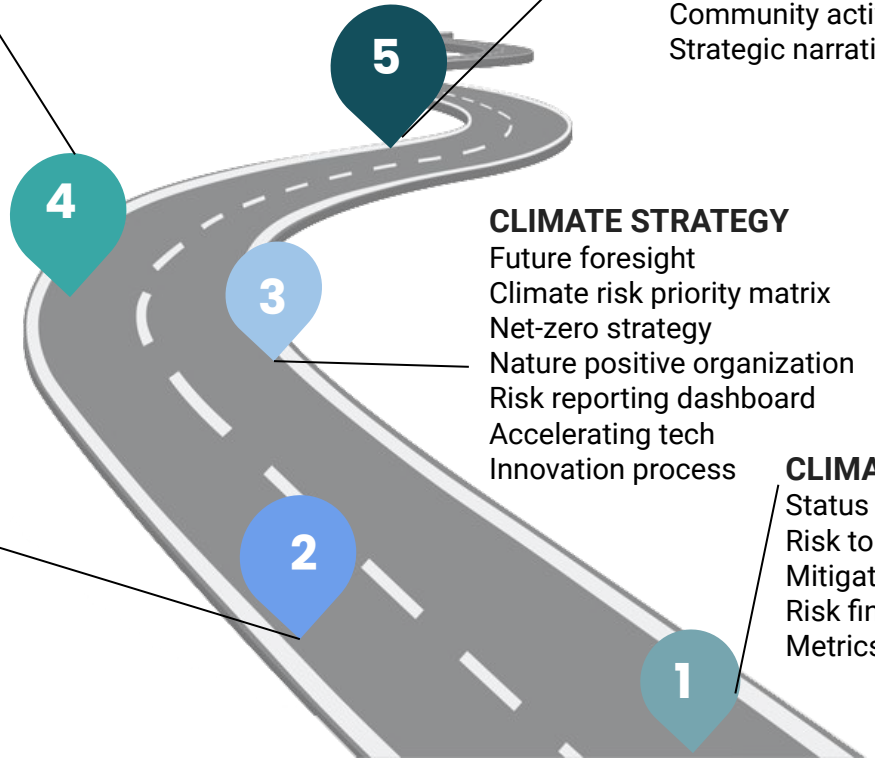
TECHNOLOGY FOR IMPACT

ROADMAP

TECHNOLOGY FOR IMPACT

IMPACT NARRATIVE
Storytelling
Key message and CTA
Network architecture+uncommon partners
Community activation
Strategic narrative campaign

STRATEGIC IMPLEMENTATION
Risk reporting capacity building
ESGs+SDGs based value proposition
Triple bottom line innovation
Stakeholder Board
3M model for organizational change



CLIMATE STRATEGY
Future foresight
Climate risk priority matrix
Net-zero strategy
Nature positive organization
Risk reporting dashboard
Accelerating tech
Innovation process

CLIMATE RISK ASSESSMENT
Status quo analysis- info needs+OKRs
Risk tolerance
Mitigation and adaptation
Risk finance and insurance
Metrics and monitoring

STAKEHOLDER MAPPING
Strategy overview
Leadership DNA
Client voice
Impact Scan

"While US banks and regulations are behind their global counterparts, **the earlier US banks begin or improve upon climate risk assessment programs, the more long-term benefit they will reap**. Investors are moving dollars to climate-positive firms and regulators are being pushed to establish climate risk standards to ensure greater transparency in ESG markets. **Banks still have the opportunity to get in front of the green wave and lay the foundation for a sound climate risk practice and a rigorous climate disclosure, without any surprises".**

-Moody's

ARE YOU READY?

Ariana Gomez
Founder & CEO,
Technology for Impact

ariana@technologyforimpact.com

TECHNOLOGY FOR IMPACT

TCFD recommended disclosures

There are 11 disclosures across 4 pillars that cover climate risks and opportunities throughout an organization

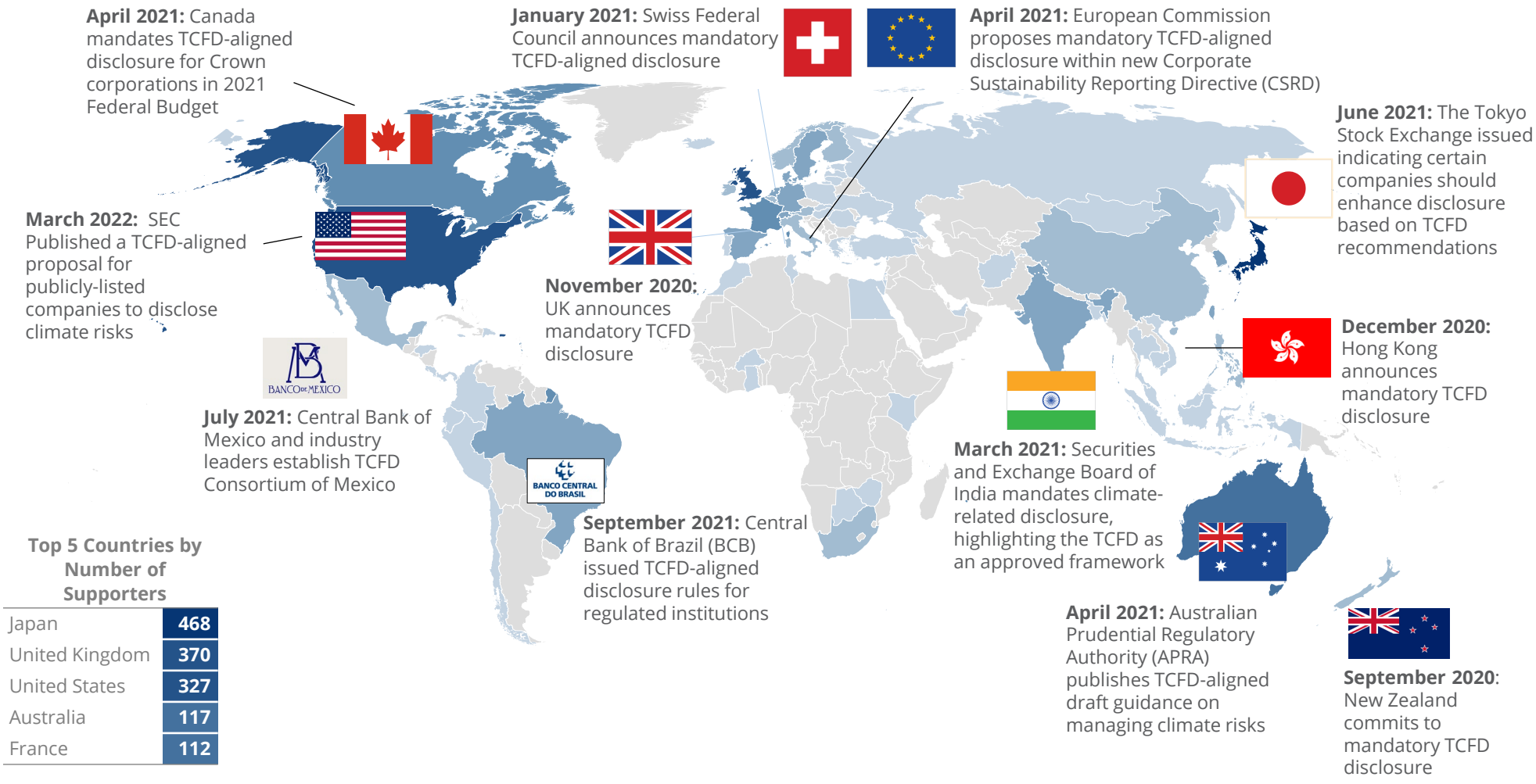
Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosures

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

The evolution of climate disclosure regulation

The TCFD has become a de facto reporting standard with multiple supervisors mandating TCFD-aligned disclosures



Top 5 Countries by Number of Supporters

Japan	468
United Kingdom	370
United States	327
Australia	117
France	112

Legend 300+ | 200-299 | 100-199 | 50-99 | 24-59 | 10-24 | <10

Number of Supporters

The latest trends in climate risk reporting

Increasing regulatory pressure is raising standards, but reports are still not widely seen as decision-useful by stakeholders

The board oversight and engagement has risen, with 92% of firms in the 2021 survey having board oversight of climate risk.

Transition risk is a higher priority at more firms than physical risk or portfolio alignment. In addition most banks consider **that climate risks should be embedded as a risk factor in other risk types** (transverse risk) and not a standalone risk.

Increasing number of firms have started to identified climate-related opportunities. Firms are expecting greater impacts on their strategies from both climate-related risk and opportunities than expected before.

The quantification and setting of hard metrics, targets and limits are areas that remain far less mature than other disclosures within the framework of the TCFD pillars. A quarter of firms are not measuring their climate risk at all.

Guidance comparison –TCFD, ISSB, SEC & ECB

Governance

	TCFD- Task-force on Climate-related Financial Disclosures	ISSB- International Sustainability Standards Board	SEC- US Securities and Exchange Commission	ECB- European Central Bank
1.Governance	• The organization's governance around climate-related risks and opportunities	• Additional information on: - The identity of the body responsible for oversight of climate-related risks - How this body's responsibilities are reflected in the entity's terms of reference, board mandates and other related policies; - How the body ensures that the appropriate skills and competencies are available to oversee climate-related risks & opportunities • Information about whether dedicated controls and procedures are applied to management of climate-related risks and opportunities and, if so, how they are integrated with other internal functions.	• Follows the TCFD structure of oversight and governance of climate-related risks by the registrant's board and management	• Recent disclosures from financial institutions shows that the quality of banks' disclosures has improved especially in the areas of risk management and governance.

Guidance comparison –TCFD, ISSB, SEC & ECB

Strategy

	TCFD- Task-force on Climate-related Financial Disclosures	ISSB- International Sustainability Standards Board	SEC- US Securities and Exchange Commission	ECB- European Central Bank
2. Strategy	• The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	• Consistent with TCFD recommendations. Mentions transition plans as part of firms' strategies & entail explicit requirements on: - Emissions reduction targets. - Use of carbon offsets. • The proposal also includes additional information on: - Direct entity responses, e.g., changes to business models, strategies, resourcing etc. - Indirect responses e.g., working with customers. - Resourcing of strategy & plans, expected changes in financial position/performance. - Resiliency, e.g. how analysis is conducted, uncertainty & capacity to adapt.	• Proposes banks to include how climate related risk have or are likely to affect the registrant's strategy, business model, and outlook. • Proposes companies to disclose if scenario analysis has been used to assess the resilience of its business strategy to climate-related risks • Requires companies to disclose if they have adopted a transition plan as part of their climate-related strategy	• By gradually integrating C&E risks into a regular supervisory methodology, and how banks manage these risks *will* ultimately impact their Pillar 2 capital requirements • Although, ECB mentions that only four in ten shared relevant information about the incorporation of C&E risks into their strategic considerations

Comparison –TCFD, ISSB, SEC & ECB

Risk Management

	TCFD- Task-force on Climate-related Financial Disclosures	ISSB- International Sustainability Standards Board	SEC- US Securities and Exchange Commission	ECB- European Central Bank
3. Risk Managment	• The processes used by the organization to identify, assess, and manage climate-related risks	• Following additions: - Inclusion of processes used to identify and prioritise opportunities; - The input parameters it uses to identify risks (for example, data sources, the scope of operations covered and the detail used in assumptions) - and whether it has changed the processes used compared to the prior reporting period.	• The registrant's processes for identifying, assessing, and managing climate-related risks and whether any such processes are integrated into the registrant's overall risk management system or processes • How any climate-related risks have an impact on its business and consolidated financial statements; short-, medium-, or long-term.	• ECB state that the more transparent banks are about their C&E risk profiles and their concrete climate related efforts, the easier it is for market participants to compare banks, reward those which are taking the necessary steps to adopt risk management practices aligned with a carbon-neutral economy, and re-evaluate those with misaligned trajectories.

Comparison –TCFD, ISSB, SEC & ECB

Metrics & Targets

	TCFD- Task-force on Climate-related Financial Disclosures	ISSB- International Sustainability Standards Board	SEC- US Securities and Exchange Commission	ECB- European Central Bank
4. Metrics & Targets	• The metrics and targets used to assess and manage relevant climate-related risks and opportunities.	• Additional requirements on disclosure of industry-based metrics relevant to an entity's industry and activities. • Requires a different disclosure treatment of greenhouse gases, as follows: - For Scope 1 and Scope 2, a separate disclosure of emissions - Scope 1- the consolidated accounting group - Scope 2- associates, joint ventures, unconsolidated subsidiaries or affiliates not included in the consolidated accounting group - Scope 3 emission disclosure is required.	• Suggests the registrant to publicly set climate-related targets or goals as a part of its climate-related risk management strategy, a description of the plan, including the relevant metrics and targets used to identify and manage any physical and transition risks (scope 1, 2 & 3) • Carbon offsets or renewable energy certificates ("RECs") that were used in achieving climate-related targets or goals • Proposed to require companies to disclose if an internal carbon price is used, information about the price, and how it is set	• Have observe a lack of concrete detail in how banks substantiate their climate-related and environmental metrics and targets. • *For example, when reporting on their commitment to align with the Paris Agreement, only around 1/5 disclose the methodologies, definitions and criteria for all of the figures, metrics and targets reported as material.*


QUESTIONS
ANSWERS

Climate Risk Evaluation & Reporting & Key Background

Jason S. Lichtstein

Akerman LLP

Atlanta, GA

April 28, 2022

akerman

Climate Impacts

The International & National Challenge

- Climate change impacts happening now & increasing in scope, frequency, and intensity
- According to NOAA, 2020 was a "historic year of extremes" in U.S.
- In 2020, in the U.S., there were **22 billion-dollar** or greater weather & climate disasters, **a record**

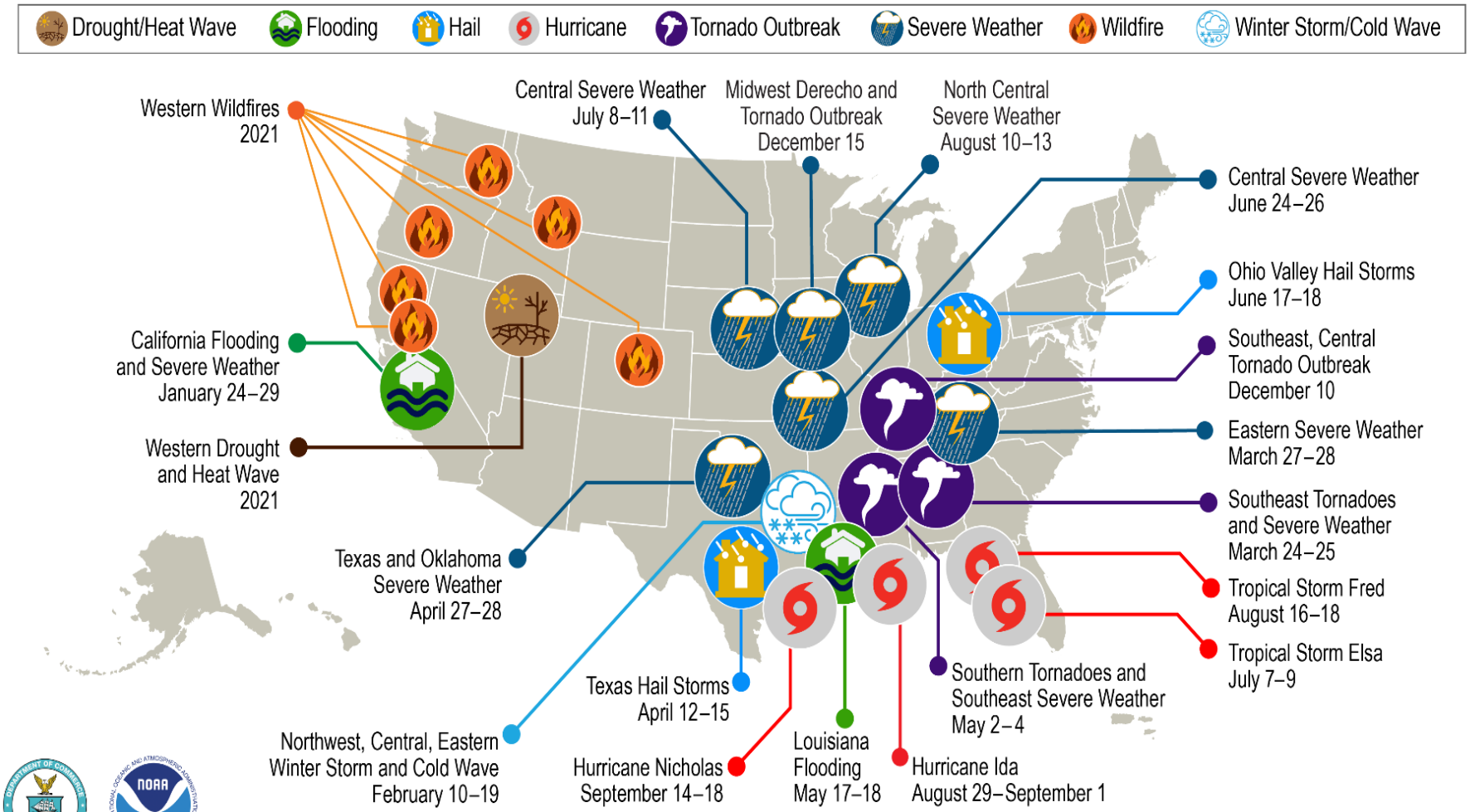
Climate Impacts

The National Challenge

- *In 2021, according to NOAA:*
- There were 20 weather/climate disaster events in U.S., with losses exceeding at least $1 billion each.
- These events include: 1 drought event, 2 flooding events, 11 severe storm events, 4 tropical cyclone events, 1 wildfire event, and 1 winter storm event.
- 1980–2021 annual average is 7.7 events (CPI-adjusted)
- Annual average for the most recent 5 years (2017–2021) is 17.8 events (CPI-adjusted).

2021 --

U.S. 2021 Billion-Dollar Weather and Climate Disasters



*This map denotes the approximate location for each of the **20 separate billion-dollar weather and climate disasters that impacted the United States in 2021***

akerman

International & National Policy Challenge

- Biden Administration: U.S. seeks to reduce U.S. greenhouse gases by 50-52% from 2005 levels by 2030 – in less than a decade
- U.S. goal of net zero emissions by 2050 – within 30 years
- *"Net zero" means* -- producing less carbon than we take out of the atmosphere. Goal is to stabilize GHGs in earth's atmosphere by second half of this century.
- Overall U.S. GHG emissions – have decreased since 2005, but projected to increase again.

Policy Goal & Challenge

- International goal/aim to hold global temperature increase to no greater than 1.5 degrees Celsius (2.7 F) by 2050, which in order to reach is viewed as necessitating far-reaching, immediate actions
- Earth has already warmed to about 1.1 degrees Celsius
- Pace: Est. average 2.7 degree Celsius increase by 2100
- More uncertainty & greater climate impacts if increase is at/greater than 2 degrees Celsius
- Described in multiple United Nations Framework Convention on Climate Change (UNFCC) & Intergovernmental Panel on Climate Change (IPCC) reports

United Nations
Climate Change

akerman

The International Setting

- **Paris Agreement (UNFCC) framework**
  - Largely up to individual parties/nations to determine steps & scope to comply in accordance with the agreement
- The Paris Agreement is a **legally binding international treaty on climate change**. It was adopted/acceded to by over 190 parties and entered into force in November 2016.
- Parties include the U.S., EU, China, and India
- **Key provision**: Goal is to limit global warming to "well below" 2 **degrees Celsius** -- and to "pursu[e] efforts to limit" temperature increase **to 1.5 degrees C** compared to pre-industrial levels.

The International Setting

- Nations submit their plans for climate action, known as **nationally determined contributions (NDCs)**.
- **5-year cycle** of increasingly ambitious national climate action through the preparation and submission of updated NDCs.
- **Global stocktake (GST)**: Process for taking stock of the implementation of the Paris Agreement, with the aim to assess global collective progress toward achieving the purposes of the Paris agreement and its long-term goals.
- Process will be repeated every 5 years.
- IPCC has multiple work groups.

Paris Agreement goals

- Increasing the ability to adapt to adverse impacts of climate change and to foster resilience
- Making financial flows consistent with a pathway toward low GHG emissions and climate-resilient development
- Paris Agreement framework is to "be implemented to reflect equity and the principle of ***common but differentiated responsibilities*** and respective capabilities, in the light of different national circumstances."
- Parties to Paris Agreement are "to undertake and communicate ambitious efforts . . . with a view to achieving the purposes of this Agreement." Parties' efforts "**will represent a progression over time**, while recognizing the need to support developing country Parties."

U.S. Approach

- ***U.S. "whole of government" strategy & approach***
- *Key Biden Administration executive orders (EOs)*
  - *EO 14008 – "Executive Order on Tackling the Climate Crises at Home and Abroad," dated 1/27/21, issued in Biden's first week of office*
  - *EO 14030 – "Executive Order on Climate-Related Financial Risk, "dated 5/20/21*
  - *Multiple federal agencies have drafted/issued climate implementation reports, per EOs*

BRIEFING ROOM

Executive Order on Tackling the Climate Crisis at Home and Abroad

JANUARY 27, 2021 • PRESIDENTIAL ACTIONS

The United States and the world face a profound climate crisis. We have a narrow moment to pursue action at home and abroad in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents. Domestic action must go hand in hand with United States international leadership, aimed at significantly enhancing global action. Together, we must listen to science and meet the moment.

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

PART I — PUTTING THE CLIMATE CRISIS AT THE CENTER OF UNITED STATES FOREIGN POLICY AND NATIONAL SECURITY

Section 101. Policy. United States international engagement to address climate change — which has become a climate crisis — is more necessary and urgent than ever. The scientific community has made clear that the scale and speed of necessary action is greater than previously believed. There is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory. Responding to the climate crisis will require both significant short-term global reductions in greenhouse gas emissions and net-zero global emissions by mid-century or before.

U.S. Approach

- *EO 14008 – "Executive Order on Tackling the Climate Crises at Home and Abroad," dated 1/27/21*
  - ***Major sections:***
  - *Putting climate crisis at center of U.S. foreign policy and national security*
  - *Taking a government-wide approach to climate crisis*
  - *Use of federal government's buying power and real property and asset management*

U.S. Approach

- *Empowering workers through rebuilding U.S. infrastructure for a sustainable economy*
- *Empowering workers by advancing conservation, agriculture, and reforestation*
- *Empowering workers through revitalizing energy communities*
- *Securing environmental justice and spurring economic opportunity*

BRIEFING ROOM

Executive Order on Climate-Related Financial Risk

MAY 20, 2021 • PRESIDENTIAL ACTIONS

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Policy. The intensifying impacts of climate change present physical risk to assets, publicly traded securities, private investments, and companies — such as increased extreme weather risk leading to supply chain disruptions. In addition, the global shift away from carbon-intensive energy sources and industrial processes presents transition risk to many companies, communities, and workers. At the same time, this global shift presents generational opportunities to enhance U.S. competitiveness and economic growth, while also creating well-paying job opportunities for workers. The failure of financial institutions to appropriately and adequately account for and measure these physical and transition risks threatens the competitiveness of U.S. companies and markets, the life savings and pensions of U.S. workers and families, and the ability of U.S. financial institutions to serve communities. In this effort, the Federal Government should lead by example by appropriately prioritizing Federal investments and conducting prudent fiscal management.

U.S. Approach

- *EO 14030 – "Executive Order on Climate-Related Financial Risk, "dated 5/20/21*
- ***Climate-related financial risk strategy**: Develop "comprehensive, Government-wide strategy" relating to climate-related financial risk; financing needs as part of net-zero transition; and areas in which private & public investments can play complementary roles.*
- *Assessment of climate financial risk by U.S. financial regulators and agencies*
- *Resilience of life savings and pensions*
- *Federal lending – incorporating climate-risk issues*
- *Long-term federal budget outlook*

Financial Sector Highlights

- ***Transition to zero or low-carbon economy in U.S. & globally***
- *Identify and manage/reduce risk to U.S. financial system from climate change & its effects and impacts*
- *Expected increase in climate disclosures/reporting*
- *Increased evaluation expected of climate risk to assets, investors, counterparties, & other stakeholders*
- *Increasing market sophistication expected in identifying material climate issues, risk, impacts, and relevance to bottom line*

Climate Risks – How They Materialize

- *Climate-related physical risks*
- *Climate-related transition risks – Timing & intensity; impacts on pricing financial products & assets*
- *Climate-related financial system risks*
  - *Risks to loans & investments*
  - *Risks to traditional industries & business sectors*
  - *Stranded assets*
- *Poses both risk & opportunity*
- *Environmental justice risks & considerations from climate impacts*

Climate Developments – U.S. Executive Branch

- Wide range of federal agencies planning for climate impacts, adaptation, mitigation & next steps
- <u>Financial Stability Oversight Council (FSOC)</u>
  - FSOC established by Dodd-Frank law in 2010; chaired by Treasury
  - Designed to respond to emerging threats to financial system
  - FSOC prepared & issued "*Report on Climate-Related Financial Risk,*" 10/21/21, major report, in response to EO 14030
  - <u>*Identified climate change as emerging and increasing threat to U.S. financial system*</u>

FSOC

FINANCIAL STABILITY OVERSIGHT COUNCIL

Report on Climate-Related Financial Risk

2021

FSOC 2021 Report

- FSOC seeks to identify and respond to vulnerabilities in the U.S. financial system so that abrupt and unpredictable shocks to economic or financial conditions do not impair the ability of the U.S. financial system to provide critical services, including the clearing of payments, the provision of liquidity, and the availability of credit.
- **"Climate change will likely be a <u>source of shocks</u> to the U.S. financial system in the years ahead.**"
- FSOC will monitor financial stability implications of potential shocks.
- **Climate-related financial risks can be grouped into two broad categories**: *(1) physical risks* and *(2) transition risks*.

FSOC 2021 Report

- **Physical risks** refer to the physical harm to people and property arising from acute, climate-related disaster events, such as hurricanes, wildfires, floods, and heatwaves -- and longer-term chronic events, such as higher average temperatures, changes in precipitation patterns, sea-level rise, and ocean acidification.
- **Transition risks** refer to stresses to institutions or sectors arising from the shifts in policy, consumer and business sentiment, or technologies associated with the changes in addressing climate change.

FSOC 2021 Report

According to the FSOC:

- As the U.S. and other countries undertake the transition to a less GHG-intensive economy, public policy, adoption of new technologies, and shifting consumer and investor preferences have the potential to impact the allocation of capital in their economies.
- If these changes occur in a **disorderly way** owing to substantial delays in action or abrupt changes in policy, their impact on firms, market participants, individuals, and communities is likely to be more sudden and disruptive.

FSOC 2021 Report

Key Passage From FSOC Report on Climate-Related Financial Risk:

"Some impacts of climate change have already materialized, ***while others will manifest over a longer time horizon than businesses traditionally consider***. For example, evidence from climate science suggests that certain physical climate impacts are already locked-in due to past emissions ***but may not materialize for many years.*** *As a result, even though there is broad consensus that climate change will bring heightened risks to financial markets and participants,* ***businesses may not have processes in place for assessing and managing these longer-term risks."*** *(Emphasis added).*

U.S. Financial System Actions

What's Happening

- U.S. Treasury Department
- Depository Institution Regulators: FDIC, Federal Reserve Board (FRB), Office of Comptroller of the Currency (OCC), the National Credit Union Administration (NCUA), & State Banking Supervisors

U.S. Financial System Actions

- U.S. Treasury Department:
  - U.S. Treasury is focused on broad range of climate-related policy work related to climate transition finance, climate-related economic and tax policy, and financial risks.
  - Appointed a Climate Counselor to coordinate and lead many of its efforts to address climate change.
  - In international affairs, U.S. Treasury plays key role in U.S. engagement on financial stability and regulatory matters. Treasury represents U.S. at the G7 and G20, at the FSB, and at other international institutions and forums, such as the IMF.

U.S. Financial System Actions

- FDIC:
  - FDIC published on 4/4/22 a request for comment on draft **"Statement of Principles for Climate-Related Financial Risk Management for Large Financial Institutions"**
  - FDIC assesses environmental risk as part of FDIC's semiannual Regional Risk Committee (RRC) process (since inception in 2006) and has performed research on the potential implications of climate-related financial risks.
  - RRCs gauge the level of concern and level of exposure to a variety of risks to determine the FDIC regulatory/supervisory actions and strategies needed.
  - FDIC has conducted research on effects of climate events on local economic & banking conditions as part of assessment of climate-related financial risks.

U.S. Financial System Actions

- Federal Reserve Board (FRB):
  - FRB established two new committees—the Supervision Climate Committee (SCC) and the Financial Stability Climate Committee (FSCC)—to bring together senior staff from FRB and the Reserve Banks on climate-related issues.
  - Aim to facilitate work directed at better understanding climate-related risks to supervised institutions and stability of financial system. Pursuing additional research.
  - Goal is to include climate-related financial risks into FRB's supervision of financial firms and financial stability framework.
  - Internal working group, the System Climate Network, formed to collaborate and develop capacity to engage and review financial risks from climate change across the Federal Reserve System.

U.S. Financial System Actions

- Office of Comptroller of the Currency (OCC):
  - OCC also released draft "**Principles for Climate-Related Financial Risk Management for Large Banks**" in December 2021
  - OCC sought public comment – through February 2022
  - Designed to target/apply to banks with $100 billion in total consolidated assets
  - "[D]esigned to support the identification and management of climate-related financial risks" by banks in this asset class

U.S. Financial System Actions

- Office of Comptroller of the Currency (OCC):
  - "All banks, regardless of size, may have material exposures to climate-related financial risks. These principles are targeted, however, at the largest banks, those with over $100 billion in total consolidated assets."
  - OCC is reviewing comments and is working with Federal Reserve and FDIC on interagency basis to finalize.
  - OCC does not have supervisory authority in this area to date; focused on large banks' climate risk management capabilities.
  - Per the Acting OCC Comptroller, after an appropriate transition period, OCC will begin assessing large banks' climate risk management capabilities.

U.S. Financial System Actions

- Office of Comptroller of the Currency (OCC):
  - OCC created the position of Climate Change Risk Officer.
  - OCC's National Risk Committee (NRC), which monitors systemic and supervision risks facing the federal banking system, receives quarterly briefings on climate-related financial risk.
  - NRC formed the Climate Risk Implementation Committee, chaired by the Climate Change Risk Officer, to identify weather- and climate-related financial risks to OCC-supervised institutions and to provide recommendations to senior OCC leadership on the integration of these risks into OCC policy, supervision, and research.

U.S. Financial System Actions

- Office of Comptroller of the Currency (OCC):
  - OCC has established senior leadership roundtable for OCC decision-makers to discuss climate change-related issues affecting the OCC and banks.
  - To assist in these efforts, OCC economists are conducting research into how the physical and transition risks of climate change translate into financial risks to the banking system, how these risks may create community impact and affect certain groups, and how the OCC can develop and evaluate a bank's exposure to climate risk.

U.S. Financial System Actions

- National Credit Union Administration:
  - NCUA established a Climate Financial Risk Working Group -- with the goal of incorporating climate-related financial risks into agency's risk-monitoring framework.
  - The working group is composed of senior staff members from across the agency.
  - Initial efforts are aimed at developing internal expertise on the financial risks associated with climate change and implications for credit unions, credit union members, and the National Credit Union Share Insurance Fund (NCUSIF).
  - NCUA plans to solicit information from credit unions and stakeholders about whether and how extreme weather events and climate change factor into risk-monitoring framework, business strategy, and products.

U.S. & State Financial System Actions

- State Bank Supervisors:
  - Conference of State Bank Supervisors' work relating to climate-related financial risk initiatives.
  - In 2020-2021, several states have issued guidance on climate-related financial risks.
  - New York State. In October 2020, the New York State Department of Financial Services issued an Industry Letter to New York regulated banking organizations and to other New York-regulated financial institutions outlining state regulatory expectations related to addressing climate-related financial risks.

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U.S. & State Financial System Actions

- State Bank Supervisors:
  - Washington State. In July 2021, the State of Washington Department of Financial Institutions issued an alert to Washington-regulated financial institutions that it would begin evaluating current strategic plans and risk management systems of depository institutions, in light of the potential threat climate-related financial risks pose to institutions and populations.

U.S. Financial System Actions

- Market Regulators
- **Securities and Exchange Commission (SEC)**
  - **SEC issued proposed rule in March 2022**
  - **Rulemaking proposal re: climate risk disclosures**
  - **Comment period until May 2022**
  - In 2021, SEC also affirmed continued applicability of 2010 SEC Climate Change Guidance & plans to update
  - In February 2021, Acting SEC Chair issued a "**Statement on the Review of Climate-Related Disclosure**" to, among other things, "enhance [SEC's] focus on climate-related disclosures in public company filings."
  - SEC Division of Enforcement task force to evaluate potential Environmental, Social & Governance (ESG) misconduct

U.S. Financial System Actions

- <u>2010 SEC Climate Change Guidance</u>
  - 2010 guidance identified certain climate-related issues that companies should consider, including:
    - Direct and indirect impact of climate-related legislation or regulations (current or pending)
    - Impact of international climate change agreements
    - Indirect consequences of climate change regulation or business trends, and
    - Physical impacts of climate change

U.S. Financial System Actions

- <u>2010 SEC Climate Change Guidance</u>
  - 2010 guidance "remind[ed] companies of their obligations under existing federal securities laws and regulations to consider climate change and its consequences as they prepare disclosure documents to be filed with us and provided to investors."
  - 2010 guidance provided that climate change disclosure might be required in a company's description of its business, legal proceedings, risk factors, and management's discussion and analysis of the company's financial condition and results of operations.

U.S. Financial System Actions

- Commodity Futures Trading Commission (CFTC)
  - CFTC Climate Risk Unit (CRU) established in 2021
  - CRU is focused on role of derivatives in pricing and addressing climate-related risk in U.S. financial system and transition to net-zero economy
  - Ensure that new derivatives products facilitate hedging, price discovery, and capital allocation
  - CFTC's (i) Market Risk Advisory Committee & (ii) Energy & Environmental Markets Advisory Committee

CFTC
COMMODITY FUTURES TRADING COMMISSION

U.S. & State Financial System Actions

- State Securities & Insurance Regulators
  - Securities: In July 2021, the Corporation Finance Section of the North American Securities Administrators Association (NASAA)—which develops and monitors statements of policy pertaining to the registration of securities under state law—expanded its responsibilities to include monitoring and responding to federal and state securities law developments regarding ESG issues
  - To determine whether new NASAA guidance, statements of policy, or model rules are appropriate

U.S. & State Financial System Actions

- State Securities & Insurance Regulators
  - Insurance: Approximately 15 state insurance regulators have taken preliminary steps to address climate-related financial risks.
  - In 2020, the National Association of Insurance Commissioners (NAIC) identified climate change as one of its 5 top regulatory priorities
    - Created a new NAIC Climate and Resiliency Task Force.

U.S. & State Financial System Actions

- <u>State Securities & Insurance Regulators</u>
  - In 2021, 15 states & D.C. required insurers licensed by or operating in their state that write $100 million or more in direct premiums annually to disclose high-level information about their climate-related financial risks and activities on an annual basis using an NAIC survey (the Insurer Climate Risk Disclosure Survey).
  - New York State, Connecticut, and Vermont are in the process of implementing laws/rules that would require insurers to integrate climate-related risks into their risk management strategies and to potentially integrate consideration of climate-related financial risks into their governance structures and risk management practices.

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WOLF
& COMPANY, P.C.

ESG AND CLIMATE RISK: PROCESS, STEPS, AND CLIENT EXPERIENCES

April 28, 2022

MARQUETTE
UNIVERSITY

INTRODUCTION

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OVERVIEW

INVOLVEMENT
•New Jersey Bankers ERM Committee

•Western Bankers ERM Committee

EDUCATION
• Bachelor of Science in Accounting from Syracuse University

• Master of Business Administration from Babson College

• Certificate in Strategy & Innovation from Massachusetts Institute of Technology

AGENDA

Current State or Organizational Program

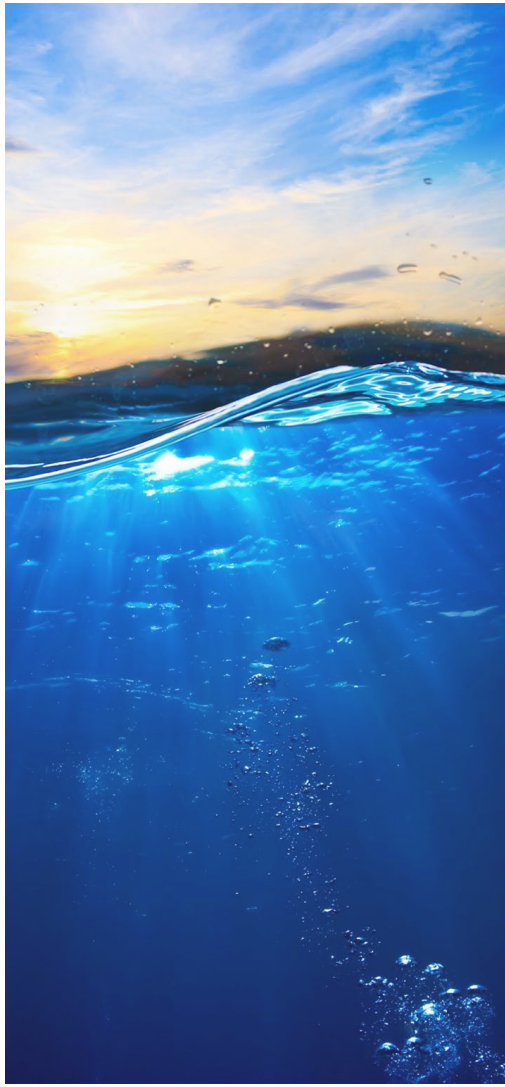
- Introduction on Global Climate, ESG Movement, Governments, and Financial Sector
- State of the Industry – Five Behavioral Cohorts

Initial Action

- What is ESG Reporting and Relevant Industry Standards
- Three Areas Everyone is Addressing

Analysis and Plotting Next Steps

- Offense vs. Defense in Management Programs
- Early Results from Climate Vulnerability Assessments



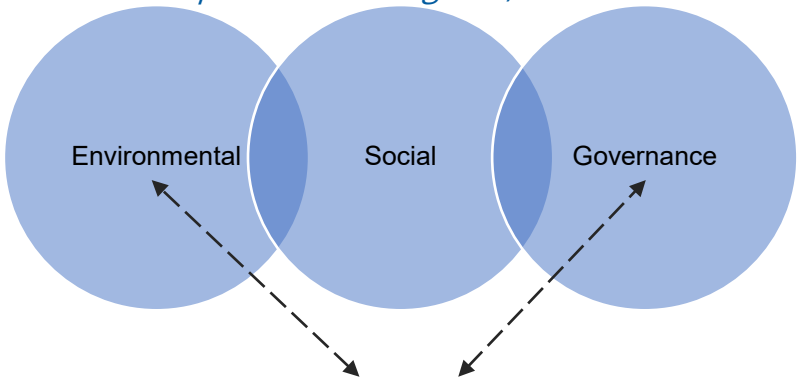
DISTINCTIONS TO BE MADE

Sustainability

Broad, all-encompassing efforts to reduce impact on or improving the world

Environmental, Social, and Governance (ESG)

More specific and targeted; data driven



Climate risk management

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GLOBAL ECOLOGY

CUSTOMERS

INVESTORS

YOUR BANK

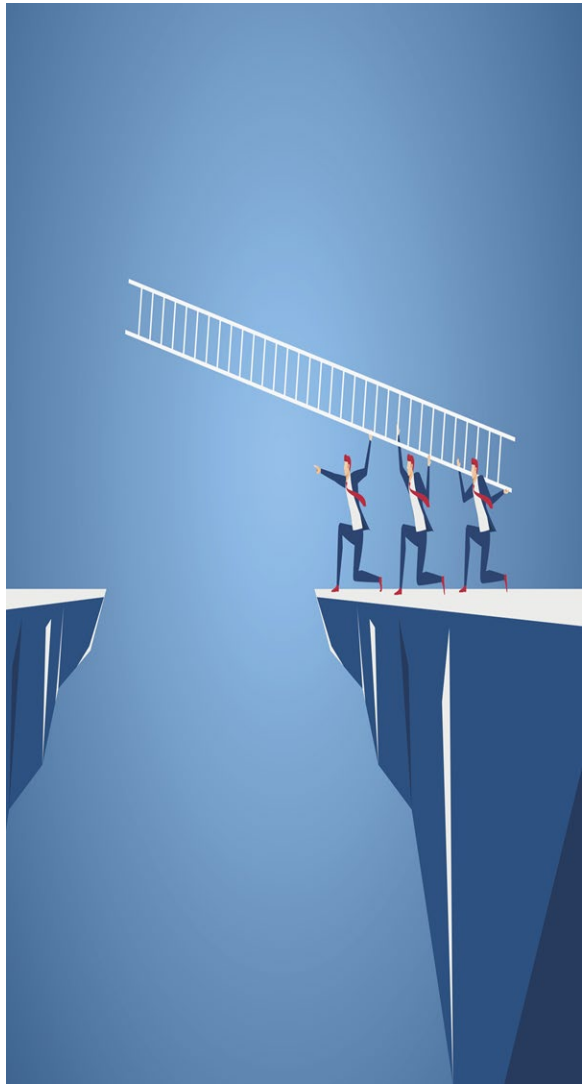
REGULATORS

SUSTAINABILITY STANDARDS SETTERS

FIVE BEHAVIORAL COHORTS

FIVE COHORTS

1. Early Adopters & NASDAQ listed companies
2. Large SEC registrants
3. Companies meeting SRI guidelines
4. Early adopters of best practices
5. Laggards (Geoffrey Moore “Crossing the Chasm”)



WHAT IS ESG?

- ESG describes business and management practices focusing on sustainability. A company is expected to have business processes, controls, and KPIs/KRIs in each area.
- Each of three specific, data driven dimensions assists to organize the initiatives:

Environmental, Social, and Governance (ESG)

Environmental			Social			Governance		
Climate change	Contamination	Water management	Community investment	Workplace safety	Employee health	Business ethics and integrity	Ownership structure	Board diversity and structure
Energy sourcing	Materials sourcing	Sustainable land use	Diversity & inclusion	Training and education	Product quality and safety	Anti-bribery and corruption	Cybersecurity	Supply-chain resiliency
GHG emissions	Energy management	Waste management	Labor management	Real-living wages	Supply-chain standards	Corporate resiliency	Lobbying	Privacy and data security
Ecological impacts (pollution, deforestation, etc.)	Sustainable products and packaging	Air quality		Hiring practices		Leadership diversity	Political contributions	Executive compensation

Environmental Standards

Environmental		
Climate Change	Contamination	Water Management
Energy Sourcing	Materials Sourcing	Sustainable Land Use
GHG Emissions	Energy Management	Waste Management
Ecological Impacts (Pollution, Deforestation, Etc.)	Sustainable Products and Packaging	Air Quality

GRI STANDARDS

TCFD

EPA United States Environmental Protection Agency

Clean Water Act

GREENHOUSE GAS PROTOCOL

EQUITABLE ORIGIN

LBCS: Land-Based Classification Standards

B Corp Climate Collective — Greenhouse Gas Baselining 101: Demystifying Scopes 1, 2, & 3 Emissions Measurement

ISO 50001 ENERGY MANAGEMENT

Republic Act 9003 Ecological Solid Waste Management Act of 2000

PCAF

SASB

GREEN SEAL

Clean Air Act

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Social Standards

Social		
Community Investment	Workplace safety	Employee Health
Diversity & Inclusion	Training and Education	Product Quality and Safety
Labor Management	Real-living Wages	Supply-chain standards
	Hiring Practices	

OSHA® Occupational Safety and Health Administration

DEPARTMENT OF LABOR · UNITED STATES OF AMERICA

GRI

NATIONAL REGISTRY OF CPE

ANSI American National Standards Institute

DEPARTMENT OF LABOR · UNITED STATES OF AMERICA

Ethical Trading Initiative

CSCMP Council of Supply Chain Management Professionals

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Governance Standards

Governance		
Business ethics and integrity	Ownership structure	Board diversity and structure
Anti-bribery and corruption	Cybersecurity	Supply-chain resiliency
Corporate resiliency	Lobbying	Privacy and data security
Leadership diversity	Political contributions	Executive compensation

U.S. SEC

U.S. Lobby Disclosure Act

WOLF & COMPANY, P.C.

CLIMATE AND SUSTAINABILITY ACTION PLAN

GOVERNANCE:

- ✓ Define the board's oversight of climate-related risks and opportunities.
- ✓ Define management's role in assessing and managing climate-related risks and opportunities.
- ✓ Select a management committee that will oversee climate-related risks

RISK MANAGEMENT:

- ✓ Define the processes for identifying, assessing, and managing climate-related risks.
- ✓ Identify an executive for accountability for managing and reporting climate-related risks.
- ✓ Define how the processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.

STRATEGY:

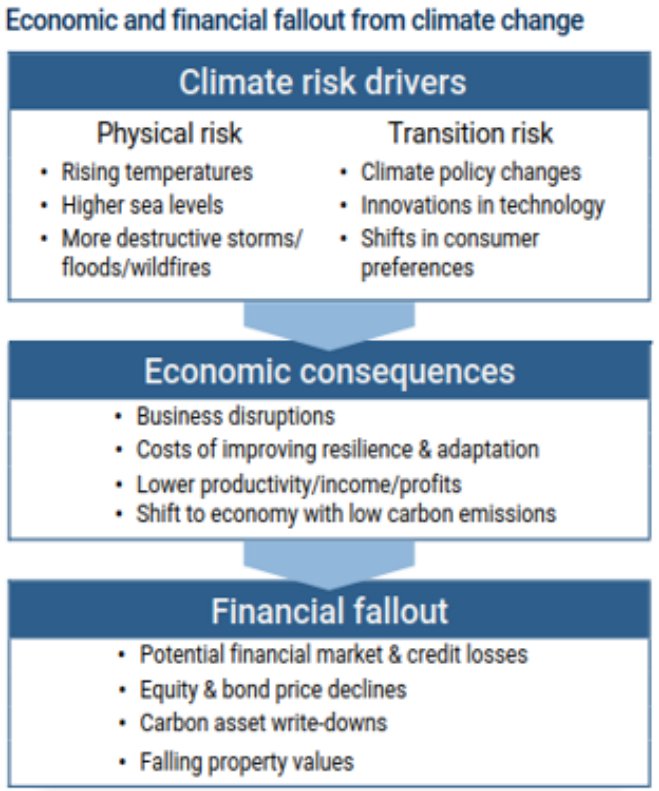
- ✓ Define the organization's climate-related risks and opportunities.
- ✓ Define the impact of the climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

METRICS AND TARGETS:

- ✓ Define the metrics used by the organization to assess climate-related risks and opportunities.
- ✓ Define the targets used by the organization to management climate-related risks and opportunities and the performance against those targets

WHAT IS CLIMATE RISK?

WHAT IS CLIMATE RISK

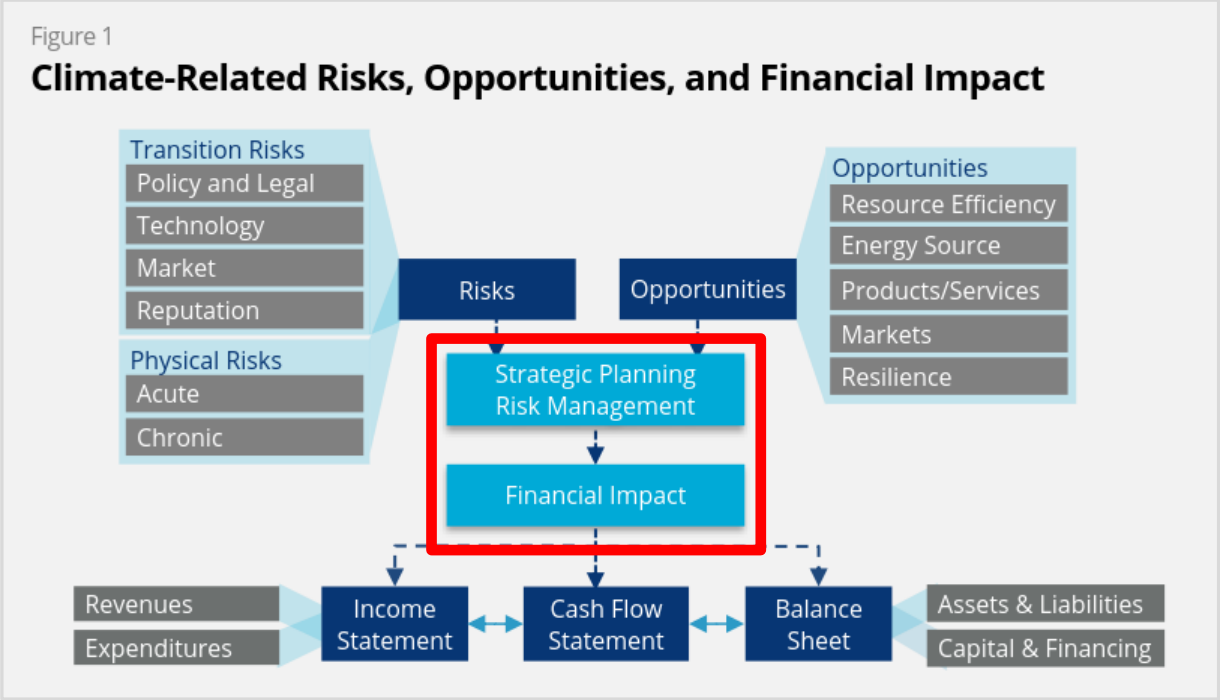


- Goal of identifying **climate-driven financial risk**:
  - To individual financial institutions
  - To the broader financial system
- Physical risk
  - Acute (event-driven) physical risks
  - Chronic (longer-term) physical risks
- Transition risk
  - Financial effects of the transition to a lower-carbon global economy

CLIMATE VULNERABILITY (RISK) ASSESSMENT

Climate-related risks and opportunities can have a direct and indirect financial impact

Supports the need for climate risk management being added to enterprise risk management



EARLY RESULTS FROM CLIMATE VULNERABILITY ASSESSMENTS

CLIMATE VULNERABILITY (RISK) ASSESSMENT

THREATS and RISKS

CREDIT

Where likely for defaults to occur

- ✓ Loan portfolio (geographic, industry concentrations)
- ✓ Investment portfolio (industry, issuer risks)

STRATEGIC

Choosing who you do business with

- ✓ Customers
- ✓ Borrowers
- ✓ Partners
- ✓ Vendors

MARKET

Risks with access to capital

- ✓ Asset managers, advisors, other investors
- ✓ Lenders

REPUTATION

How will you be perceived in the market

- ✓ Customers
- ✓ Human capital / employees
- ✓ Community
- ✓ Vendors / service providers

OPERATIONAL

Potential disruption of operating your business

- ✓ Processes
- ✓ Systems
- ✓ People
- ✓ Vendors/ service providers

Sample Deliverable: CVA Summary Report

Functional Risk Category	Inherent Risk	Quality of Mitigating Controls	Residual Risk	Additional Information
1. Information Technology risk	High	Strong	Low	• The single threat is technology obsolescence due to transition risks. We have not yet evaluated the threat.
2. Third Party risk	High	Weak	High	• Third party climate controls have not yet been developed.
3. Business Continuity risk	Very Low	Satisfactory	Very Low	• BCP plan is in place and periodically tested.
4. Regulatory Compliance risk	High	Satisfactory	Moderate	• Changes are anticipated, training and monitoring programs initially in place, will need adjustment over time.
5. Interest Rate risk	Low	Satisfactory	Low	• Minimal risk, will watch over time.
6. Credit risk	Moderate	Satisfactory	Low	• Asset impairment is the top concern. Procedures are being enhanced.
7. Price risk	Moderate	Satisfactory	Low	• New product pricing is a concern, due diligence and monitoring are being enhanced.
8. Liquidity risk	High	Satisfactory	Moderate	• Deuteriation in financial condition is the top concern, budgeting is being reviewed.
9. Strategic risk	Moderate	Insufficient	Moderate	• Climate risk initiatives likely a future initiative
10. Reputation risk	High	Insufficient	High	• Control measures have not yet been developed

Foundations:

- The Inherent risk measure the likelihood and impact of threats.
  122 Threats in the Wolf Threat Registry.
- The Quality of Controls measures the existence of current controls designed to mitigate Inherent risk.
  45 Controls in Wolf Global Control Library.
- Residual risk is the risk that remains. High Residual risk requires immediate action (or accept the risk)
- Monitoring program required to identify emerging threats.

Client Observed Action Items:

- Third Party risk does not yet include oversight of vendors.
- Strategic plans to exit and enter products, customers, geographies not yet addressed.
- Reputation risk is understood but not yet impacted.

Final Thought

"Amateurs built the ark;
professionals built the Titanic."

Unknown

Bottom Line

Let's not delay in trying new approaches. We can't fix anything unless we are moving (forward).

WOLF AS AN ESG RESOURCE

- Corporate Climate Governance
- Climate Vulnerability Assessment
- Executive Management and Board Training
- ESG Readiness Assessment
- Climate and Sustainability Reporting and Assurance
  - GHG/carbon accounting services

Appendix A

CLIMATE AND SUSTAINABILITY METRICS

CATEGORY	SUBCATEGORY	RISK TYPE	DESCRIPTION OF METRIC
Greenhouse Gas (GHG) Emissions	Emission Level	Transition	Total emissions (by type of GHG, by source, by Scope)
	Emission Intensity	Transition	Emissions per output scaling factor (e.g. revenues, sales, units produced)
	Embedded Emissions	Transition	Emissions per unit of fossil fuel reserves
Energy/Fuel	Energy Usage	Transition	Total energy consumption (megawatt hour [MWh] or gigajoules [GJ] per year)
	Energy Intensity	Transition	Total energy consumed per output scaling factor (e.g. revenues, sales, units produced, floor area)
	Energy Mix	Transition	Percent of energy by type of energy source (e.g. renewable, hydro, coal, oil, natural gas) (MWh or GJ)
Water	Water Usage	Physical	Total freshwater withdrawn (cubic meters)
	Water Intensity	Physical	Amount used per output scaling factor (e.g. revenues, sales, units produced) (cubic meters)
	Water Source	Physical	Amount withdrawn from areas of high baseline water stress (cubic meters) Amount treated and recycled (cubic meters)
Land Use	Land Cover	Physical	Percent of land by cover type (e.g. grassland, forest, cultivated, pasture, urban) Annual change in cover type
	Land Use Practices	Transition	Percent of land used for agriculture tillage, grazing practices, sustainability practices, or conservation practices
Location	Coastal Zone	Physical	Locations within a coastal zone
	Flood Zone	Physical	Locations with a designated flood zone
Risk Adaptation & Mitigation	R&D	–	Amount invested in developing low-carbon products, services and/or technology
	CapEx	–	Amount invested in deployment of low-carbon technology, energy efficiencies, etc. Amount invested in resiliency capabilities

Appendix A

CLIMATE AND SUSTAINABILITY METRICS: BANKING AND INSURERS

CATEGORY	DESCRIPTION OF METRIC
Governance	Number of board/committee meetings per year in which climate-related issues have been a substantive agenda item
	Number of events held per year to train board members and management on climate-related issues
Strategy	Number of memberships of external bodies/organizations pursuing climate-related policy and/or advocacy initiatives
	Proportion of portfolio held at the end of a specific year: (a) for which climate change risk metrics have been requested and (b) for which metrics of an acceptable quality have been provided
	Proportion of portfolio held at the end of a specific year with which the firm has engaged on climate-related risks and opportunities has been a substantive topic
Risk Management	Proportion of portfolio with exposure to companies with fossil fuel revenues or other carbon heavy businesses
	Proportion of portfolio with product held in low carbon opportunities
	Proportion of clients reporting in accordance disclosure good-practice e.g. CDP, TCFD, SASB, CDSB
	Proportion of portfolio highly exposed to key indicators of physical risks e.g. mortgages secured on property in 100-year and 200-year flood plains, by geography/sector, etc.)
	Concentration of the portfolio financing greenhouse gas emissions by tier Scope 1, Scope 2, and Scope 3
	Actual natural catastrophe and severe weather-related losses by business unit across the financial institution – gross and net (after reinsurance)
	Impact of natural catastrophe and severe weather-related losses on combined operating ratio.
	For insurers, concentration of risk by geographic region e.g., % by region

Appendix B

Principles for a U.S. Transition to a Sustainable Low-Carbon Economy

- Set science-based climate policy goals that align with the Paris Agreement
- Increase and strengthen U.S. international engagement
- Provide clear long-term policy signals that foster innovation in financial services
- Price carbon and leverage the power of markets
- Minimize costs and support jobs in the transition
- Foster international harmonization of taxonomies, data standards and metrics
- Promote more robust climate disclosure and international standards
- Ensure climate related financial regulation is risk based
- Build capacity on climate risk modeling and scenario analysis
- Strengthen post-disaster recovery, risk mitigation and adaptation

U.S. Climate Finance Work Group, 2021, ABA Journal, Climate Risk Principles

Appendix C

SEC Propose Rule

- Requires climate-related information in registration statements and 10-K
- Identified climate-related risks, governance and risk management practices
- Greenhouse Gas (GHG) emissions
    - And assurance over those for large accelerated and accelerated filers
- Metrics and disclosures on climate-related targets and goals and transition plans in financials
- Effective Dates:

Filer Type	Disclosures & Scope 1-2 GHG	Scope 3 GHG	Assurance?
Large Accelerated	Fiscal year 2023	Fiscal year 2024	Limited – FY2024, Reasonable – FY2026
Accelerated	Fiscal year 2024	Fiscal year 2025	Limited – FY2025, Reasonable – FY2027
Smaller Reporting	Fiscal year 2025	Exempted	Exempted

Appendix C

REGULATORY ENVIRONMENT

Biden Administration Executive Order to financial regulators (May 2021)

Puts the Treasury Department at the forefront of:

- Working with other federal agencies (**Interagency Climate Change Adaptation Task Force)**
- Working to **prevent climate change-created economic and financial crises**
- Bolster adaptation of **increase resilience** to the impacts of climate change
- To advance efforts to provide financial regulators, financial institutions, and investors with the best **information and data to measure climate-related financial risks.**

Appendix C

REGULATORY ENVIRONMENT (cont.)

- Federal Reserve Bank (FRB)
  - Setting the expectation for **internal climate risk assessments**. FRB will be **assessing vulnerabilities of climate change** to the financial system. (February 2021)
  - Creation of the Financial Stability Climate Committee (FSCC) - (March 2021)
  - Joined the Network for Greening the Financial System (June 2021)
  - Developing **Climate Scenario Analysis** to model the potential risks and assess ability to manage those risks (October 2021)
- OCC
- American Bankers Association
  - Developed principles for the climate transition including new climate-related risk-based financial regulation
  - Responded to the FRB's request for input supporting the SEC's ESG related disclosures

ABOUT WOLF & COMPANY, P.C.

111

YEARS IN BUSINESS

- Established in 1911
- Built on quality and integrity
- Succession strategy to remain independent allows us to be with you throughout your business lifecycle

350+

EXPERIENCED, HIGHLY TRAINED PROFESSIONALS

- Lower-than-industry-average staff turnover means a consistent team structure year after year
- Niche team dedicated to your industry

RESOURCES TO LEARN MORE

- Cultures & Values
- Inclusion & Diversity
- Our History
- Social Responsibility
- Thought Leadership
- Wolf Global

Wolf & Company ranked 2020

#2 BEST LARGE FIRM TO WORK FOR

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INDUSTRIES WE SERVE

With clients in 48 states, our industry-focused structure allows our clients access to experts who offer services tailored to their organization's industry standards, requirements, and best practices. Our specialized teams provide innovative solutions based on your unique challenges.

FINANCIAL SERVICES

- Asset Management
- Banks
- Brokers-Dealers
- Credit Unions
- Fintech
- Funds

HEALTHCARE

- Business Associates
- Life Sciences
- Providers

MANUFACTURING, DISTRIBUTION & RETAIL

TECHNOLOGY

- Fintech

WOLF & COMPANY, P.C.

ABOUT WOLF & COMPANY, P.C.

SERVICES WE OFFER

We combine industry expertise with service specialization to provide your organization with insight, opportunities, and solutions allowing you to address your unique business needs.

ADVISORY

- Business Continuity Management
- Cybersecurity
- Enterprise Risk Management
- Internal Audit
- IT Audit
- Regulatory Compliance
- Virtual CISO (vCISO)

ASSURANCE

- Employee Benefit Plan Audits
- Financial Statements Audits
- HIRUST
- PCI DSS
- SOC Reporting

TAX

- Business Tax
- Federal
- International
- State & Local
- Private Client Group

WOLFPAC

Integrated risk management SaaS suite

WOLF & COMPANY, P.C.