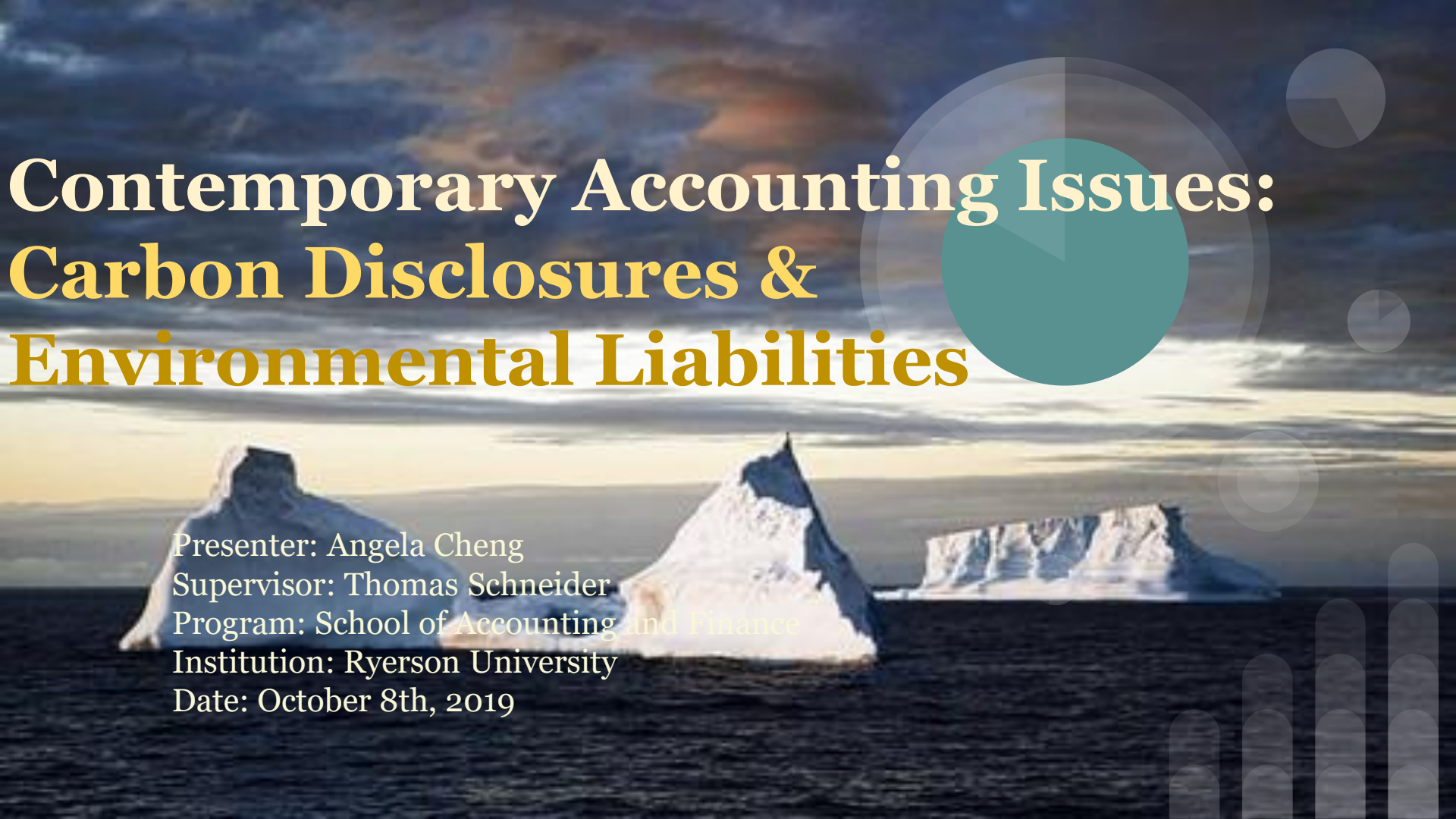
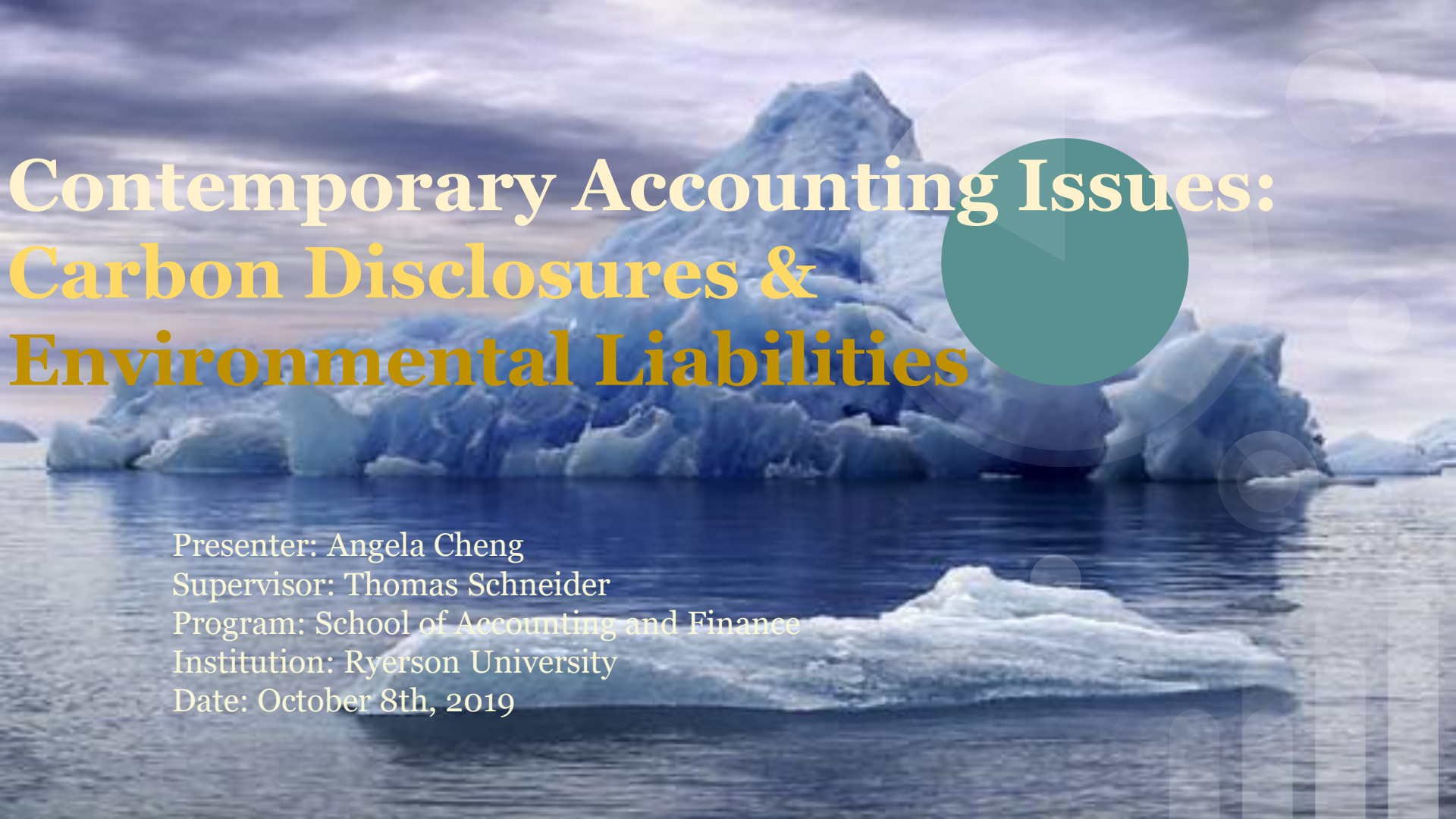
Contemporary Accounting Issues: Carbon Disclosures & Environmental Liabilities



Presenter: Angela Cheng
Supervisor: Thomas Schneider
Program: School of Accounting and Finance
Institution: Ryerson University
Date: October 8th, 2019



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1. Legitimacy Theory
2. Introduction to GHG Accounting and Climate-Related Risks
3. Users of Climate-related Financial Disclosures
4. Task Force's Recommendations on climate-related Financial Disclosures
5. Climate-related risks and opportunities (Based on TCFD & CDP)
6. Climate-related Financial Disclosures – Disclosure Guidance
7. TCFD's Recommendations – Status of Adoption
8. Environmental Liabilities – ExxonMobil Case study

1. Legitimacy Theory - introduction

Legitimacy Theory proposes the idea that organizations must justify its *raison d'etre* within the broader social context, by aligning its business actions and activities in line with socially constructed norms, values, expectations or rules.

Den Patten: "Social legitimacy is monitored through the public policy process, and [for reporting entities] greater social and political exposure requires more extensive CSR reporting."

Legitimacy Theory – Example 1

For instance, one paper, “The role of Environmental Disclosures as tools of legitimacy – a Research Note” proposes a negative correlation between a firm’s environmental performance and its environmental disclosures, where entities with poorer environmental performance are more likely to report more overly positive, extensive environmental disclosures to offset any negative perception towards their business, so effectively environmental disclosures can be used as “tool for legitimacy”, rather than used to inform users about their actual performance. (According to the Conceptual frameworks for financial reporting, overstating your performance violates ***faithful representation***, *particularly* ***Neutrality*** *– which proposes the idea to not overstate/understate your financial position to mislead users into thinking you perform better than you actually did.)*

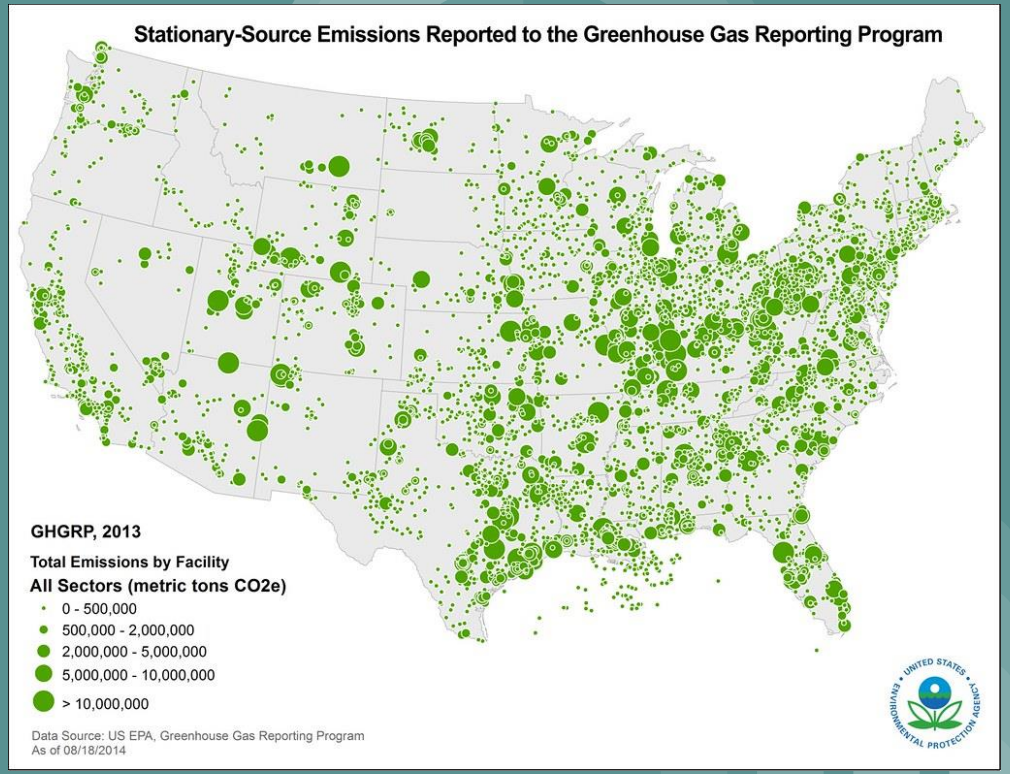
Source: Charles H. Cho, Dennis M. Patten, (2007) "The Role of Environmental Disclosures as tools of legitimacy: A research note." Journal: Accounting, Organizations and Society. Volume 32, Issue 7-8, pp 639-647. DOI: https://doi.org/10.1016/j.aos.2006.09.009

Legitimacy Theory – Example 2

As another example, an interesting argument that I came across has to do with the measurement of social disclosure, which should relate more closely to public pressure variables *rather than* profitability measures, since the reasons why firms tend to disclose their business impact on the broader social context that they operate in is to respond to anticipated or existing criticisms caused by their actions, with the intention to appease stakeholders and temper any resistance to the organization's efforts from achieving their objectives that is counter to the interests of communities that the business operates in. Again, this paper seems to base their research on the idea that organizations can use voluntary disclosures as a legitimacy tool to protect their reputation, rather than taking action to address real issues whenever business actions come into conflict with social interests.

2. GHG Accounting and Climate-related risks

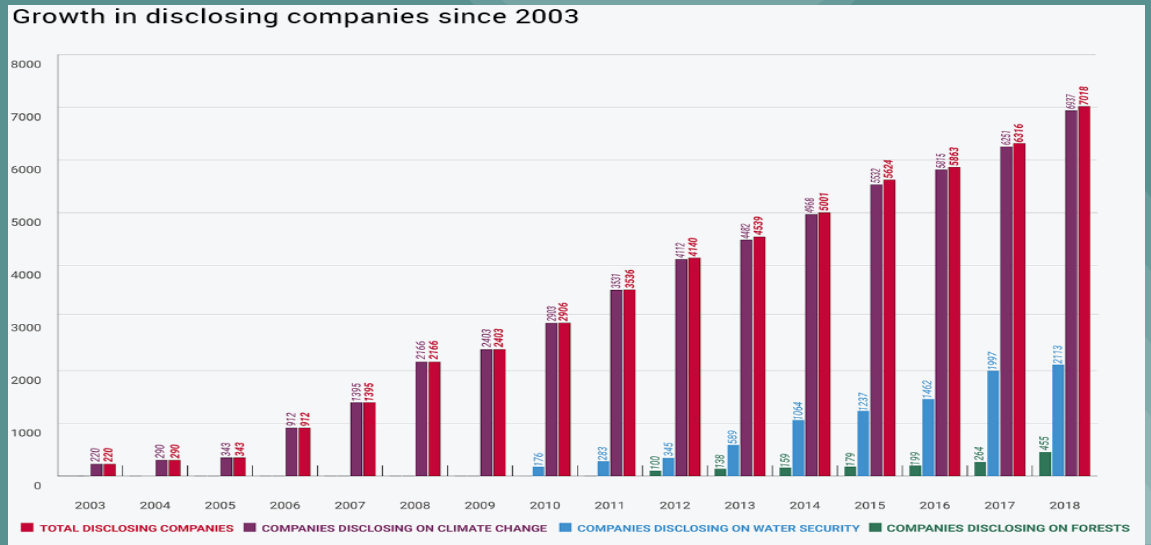
Progress: *Currently, Greenhouse Gas Accounting and Assurance standards and frameworks are still being developed and refined through the collaboration of various practitioners, regulatory bodies, and researchers to help reporting entities to identify the exposure to climate-related risks, and to provide guidance on a consistent and comparable framework for businesses across all sectors.*



2. GHG Accounting and Climate-related risks

Voluntary NFP's:

The Global Reporting Initiative is a sustainability-focused risk-management tool that helps preparers to understand and communicate their social impact on issues such as corruption, climate change, or human rights. To date, the **GRI's** global network has garnered 30,000 practitioners.



2. GHG Accounting and Climate-related risks

Voluntary NFP's:

The Carbon Disclosure Project (abbrev. CDP) was started in 2002 and is based in London, UK. The CDP is based on the *Global Reporting Initiative (GRI)* concept. Similar to the GRI, the CDP also supports sustainable development of businesses and municipalities to disclose environmental impacts in a broader social and environmental context, *for the purpose of driving insight and action towards a sustainable and low-carbon economy*.

2. GHG Accounting and Climate-related risks

Voluntary NFP's:

The **CDP** has collected data on over 7000 organizations to date, which grew from 200 organizations since 2003. The CDP provides a global disclosure system that enables reporting entities to measure and manage their own environmental impacts. Self-reporting entities submit their data to CPD on several themes, which is *climate change*, *Deforestation*, and *Water Security*. The data undergoes analysis to be transformed into useful information that deliver insights on the reporting entity's environmental impacts and the associated risks and opportunities, which then becomes part of CDP's data collection on environmental disclosures.

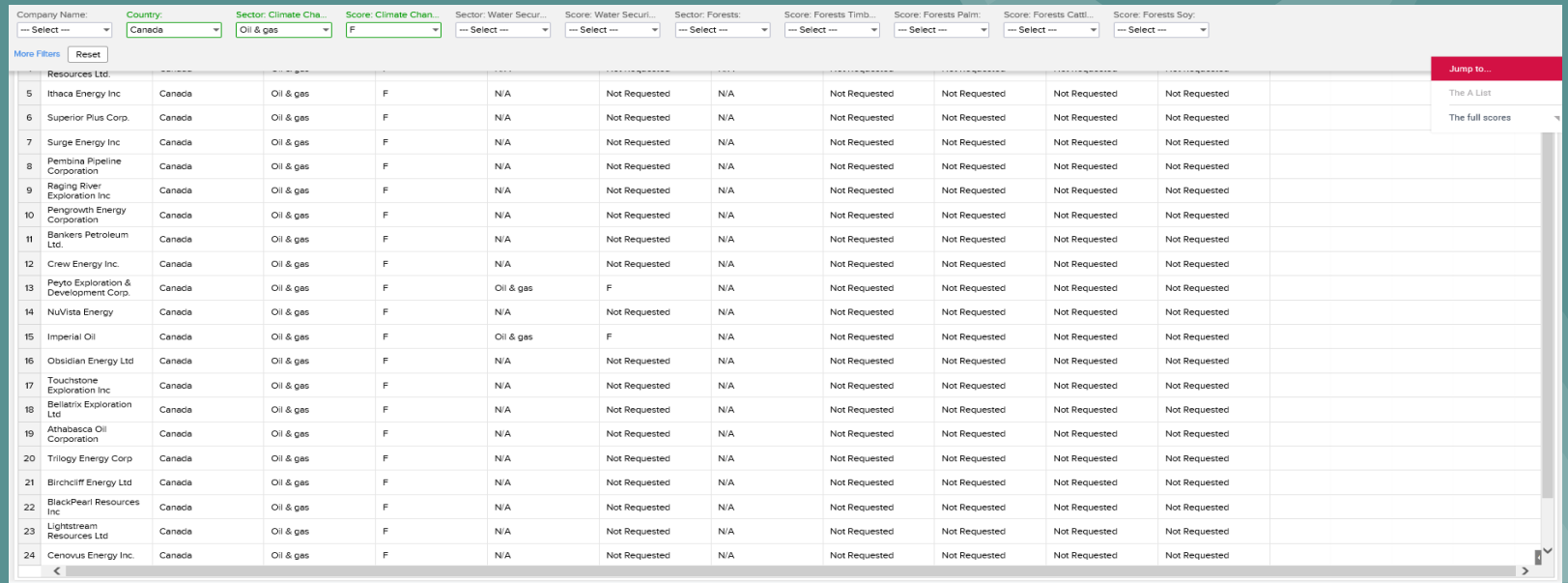
2. GHG Accounting and Climate-related risks

Voluntary NFP's:

CDP classifies surveyed company responses by industry or sector. CDP also provides status updates on any reporting issues experienced by early adopters by conducting a survey or questionnaire for their existing practitioners. The CDP also conducts their own climate change research and analysis over the 7000+ companies and 700+ municipalities volunteered and issue reports on key findings to their public domain.

2. GHG Accounting and Climate-related risks

CDP database can refine your search by company name, country or scores along the themes of *climate change*, *water security* and *forestation*. Similar to the academic grading criteria, the best performers receives an A+, average performers are graded B or C, but companies with unsatisfactory performance or insufficient disclosures receives a grade of F.



Company Name: --- Select ---
Country: Canada
Sector: Climate Cha... Oil & gas
Score: Climate Chan... F
Sector: Water Secur... --- Select ---
Score: Water Securi... --- Select ---
Sector: Forests: --- Select ---
Score: Forests Timb... --- Select ---
Score: Forests Palm: --- Select ---
Score: Forests Cattl... --- Select ---
Score: Forests Soy: --- Select ---
More Filters | Reset

Jump to...
The A List
The full scores

	Resources Ltd.										
5	Ithaca Energy Inc	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
6	Superior Plus Corp.	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
7	Surge Energy Inc	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
8	Pembina Pipeline Corporation	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
9	Raging River Exploration Inc	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
10	Pengrowth Energy Corporation	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
11	Bankers Petroleum Ltd.	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
12	Crew Energy Inc.	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
13	Peyto Exploration & Development Corp.	Canada	Oil & gas	F	Oil & gas	F	N/A	Not Requested	Not Requested	Not Requested	Not Requested
14	NuVista Energy	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
15	Imperial Oil	Canada	Oil & gas	F	Oil & gas	F	N/A	Not Requested	Not Requested	Not Requested	Not Requested
16	Obsidian Energy Ltd	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
17	Touchstone Exploration Inc	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
18	Bellatrix Exploration Ltd	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
19	Athabasca Oil Corporation	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
20	Trilogy Energy Corp	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
21	Birchcliff Energy Ltd	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
22	BlackPearl Resources Inc	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
23	Lightstream Resources Ltd	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested
24	Cenovus Energy Inc.	Canada	Oil & gas	F	N/A	Not Requested	N/A	Not Requested	Not Requested	Not Requested	Not Requested

3. Users of Climate-related Financial Disclosures

i) ***Investors*** – *decides whether to buy, hold or short company stocks.* One of the reasons why climate risks are becoming a material consideration is due to a growing number of investors demanding to see climate impact on the future value of the companies that they invest in. *For instance, the 3 largest institutional investors of Exxonmobil have pressured the largest global fossil fuel company to provide transparent financial disclosures between 2015 - 2017, with over 60% of shareholders on board by 2018. Despite initial resistance, Exxonmobil finally released climate-related information in their recent proxy statement – because that statement misrepresented the real cost of climate issues they face, there's currently an ongoing litigation between the NY State's Attorney General and Exxonmobil, which will be discussed later.*

ii) ***Lenders/Creditors*** – according to TCFD , large asset owners and managers from financial institutions has a particularly important role to play to influence the organizations that they provide capital to, since they sit at the top of the investment chain.

iii) ***Regulating bodies*** - responsible for overseeing financial systems on a macro-level for reasons such as ensuring economic and market stability (i.e to prevent sudden "crashes" or losses of values). Policymakers can use insights uncovered from environmental data to implement effective policies to meet their regional emissions reduction targets. The Carbon Disclosure Project is one NFP organization that provides a platform for collecting and disseminating environmental data in aggregate, sourced from the voluntary disclosures of businesses from various industries.

iv) ***Issuers / internal preparers user group*** - Preparers of GHG emissions information could be for for-profit businesses, cities and municipalities (regional), or government controlled or private NFP entities.

4. Task Force's Recommendations on Climate-related Financial Disclosures

WHAT: The TCFD was originally assembled by the Financial Stability Board (FSB) and spearheaded by Michael Bloomberg.

The recommendations provide useful guidances geared towards financial sectors on how to disclose climate issues relevant to their business, and is intended for widespread adoption by all reporting entities, in order to make climate disclosures more *readily available* and *transparent* for the capital markets globally.

To achieve this aim, The Task Force on climate-related Financial Disclosures (TCFD) standardized common terminologies of climate risks and opportunities for consistent reporting. To date, TCFD was able to garner support from 513 organizations and rapidly growing – induced by a surge in investor's growing demand for decision-useful climate disclosures in annual reports and the financial impact to the business that they have a vested economic interest in (ExxonMobil case will further discuss an instance of investor's push for climate disclosures, despite management's resistance).

4. Task Force's Recommendations on Climate-related Financial Disclosures

WHY?

Without sufficient and relevant climate-risk information, assets are over-priced are not "trued-up" to their realizable market value (write-downs due to impairments are not made, overvalued fossil fuel reserves, etc); the market consequence on the macro-level can lead to a "Carbon" bubble in the stock market, which inevitably lead to a crash (a sudden collapse in the stock market prices, which occurs in economic downturn). Since FSB's role is to oversee the stability of the financial market, this is why they are strongly pushing for a rapid adoption of the TCFD's recommendations to have better information and understanding of how climate risk impact a firm's asset's ability to generate returns.

To achieve this aim, The Task Force on climate-related Financial Disclosures (TCFD) standardized common terminologies of climate risks and opportunities for consistent reporting. To date, TCFD was able to garner support from 513 organizations and rapidly growing – induced by a surge in investor's growing demand for decision-useful climate disclosures in annual reports and the financial impact to the business that they have a vested economic interest in (ExxonMobil case will further discuss an instance of investor's push for climate disclosures, despite management's resistance).

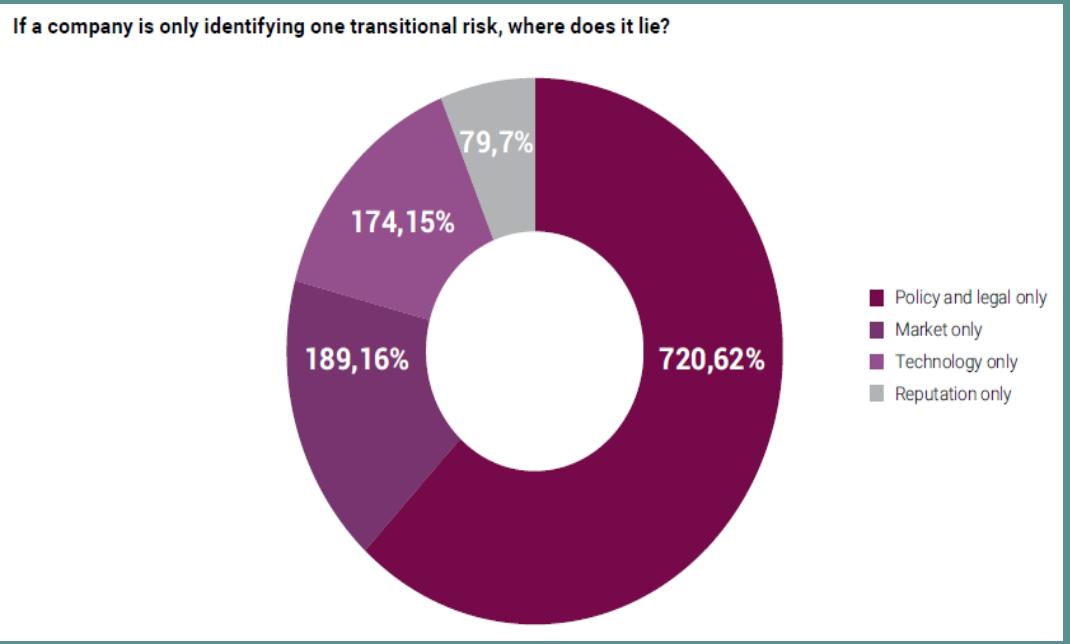
4. Task Force's Recommendations on Climate-related Financial Disclosures

WHERE

Publicly traded companies in most G20 jurisdictions have an obligation to disclose all material information in their public financial filings. Since climate-related information is becoming a material consideration due to its pervasive impact and high estimation uncertainty, climate disclosures should be reported in the entity's *Mainstream Public Annual Financial Filings*, to stay compliant with regulatory requirements and to facilitate stakeholder engagement.

In addition, publishing climate information in mainstream annual financial filings also helps ensure that appropriate controls are in place to govern how climate information are captured and summarized, because it entails a proper review by CFO and audit committee before publication – as part of the requirements for financial filings.

5. Climate-related risks and opportunities



Both the **CDP** and **TCFD's** recommendations provide guidance on *identifying climate-related risks and opportunities*.

CDP accounted for over 2,700 companies in their database who reported at least one substantive transitional risk. (CDP's 2018 Climate Report, below.) The most reported *transitional risk* are the *increased pricing of GHG emissions* – categorized under *policy and legal risk*. High *GHG emissions pricing* can be linked to higher compliance costs and increase insurance premiums, which increase the entity's *operating costs*.

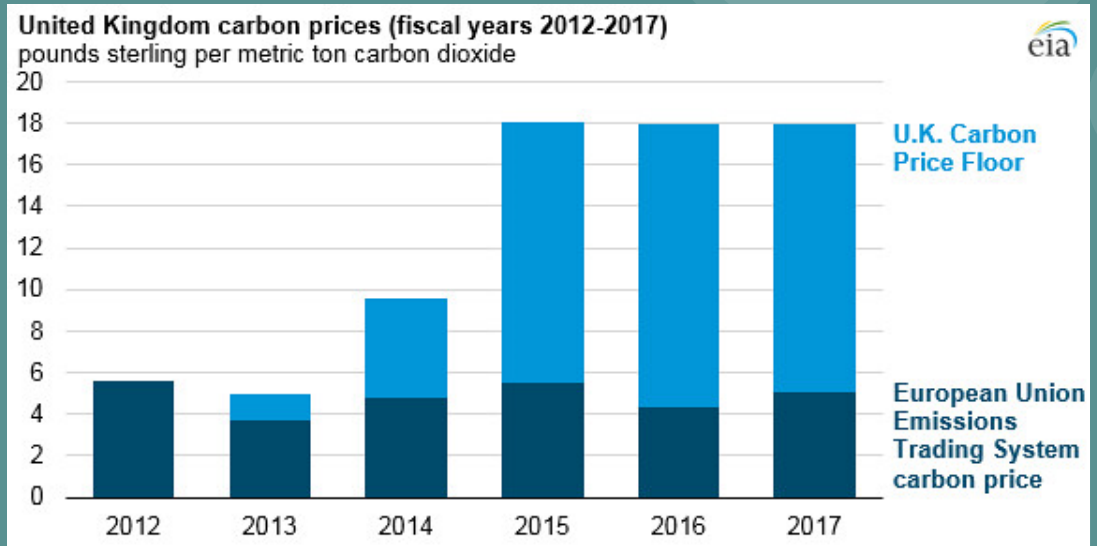
5. Climate-related risks and opportunities

1. Transitional Risks

Policy and legal Risks - cause *increased pricing of GHG emissions*, stringent emissions-reporting obligations, increased regulation of at-risk G & S, and exposure to litigation due to environmental impact.

The purpose of policy actions aims to guide economic actors towards adopting solutions or using more efficient, low-emission energy sources, such as substituting the use of Petroleum or Liquified-Natural-Gas with renewable energies in transportation or other high-polluting sectors. Therefore, Policy can both *constrain bad actions* from further adverse impact, and *promote positive actions* that help businesses stay adaptive to climate issues while seizing opportunities.

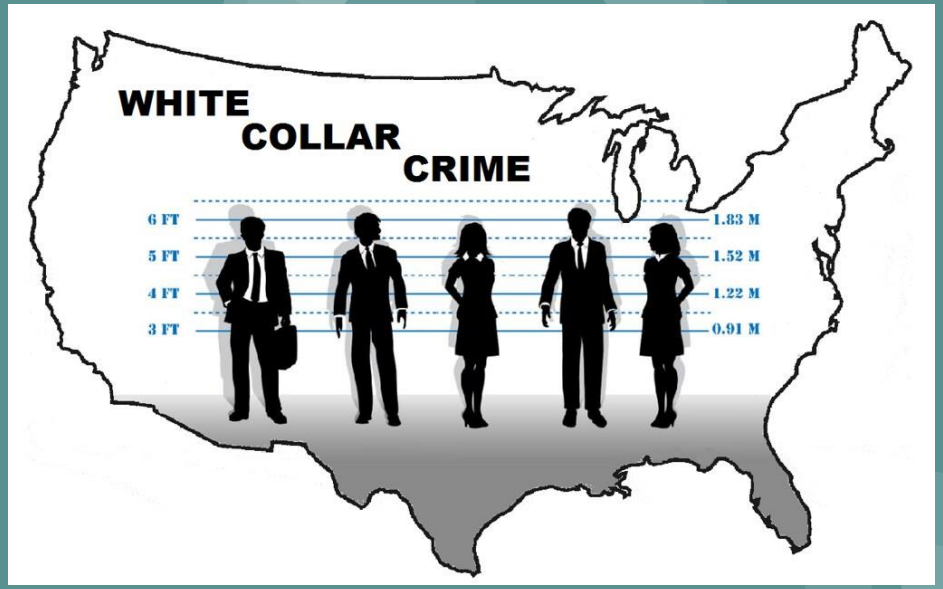
Financial Impact : an increase to compliance costs, insurance premiums, asset impairments & write-offs, and early retirements of existing assets; some of the ways that can happen includes incurring fines and judgment for violating carbon regulations and causing environmental harm, leading to reduced demand for products –if legal issues goes public, companies are also exposed to reputational risk, which is discussed next.



5. Climate-related risks and opportunities

1. Transitional Risks

Reputational Risks - induced by stigmatization of sectors (fossil fuel) and negative stakeholder response to business actions that causes social and environmental harm. As already discussed in Organizational Legitimacy Theory on why companies tend to voluntarily disclose their social impact, entities who fail to implement a mitigation and adaptation strategy to reduce their carbon footprint and operate more sustainably works counter to social interests, and they will find it hard to stay in business when opposed by security regulators, institutional investors as well as activists. Reputational risk does not only concern firms, it can also concern an entire nation.

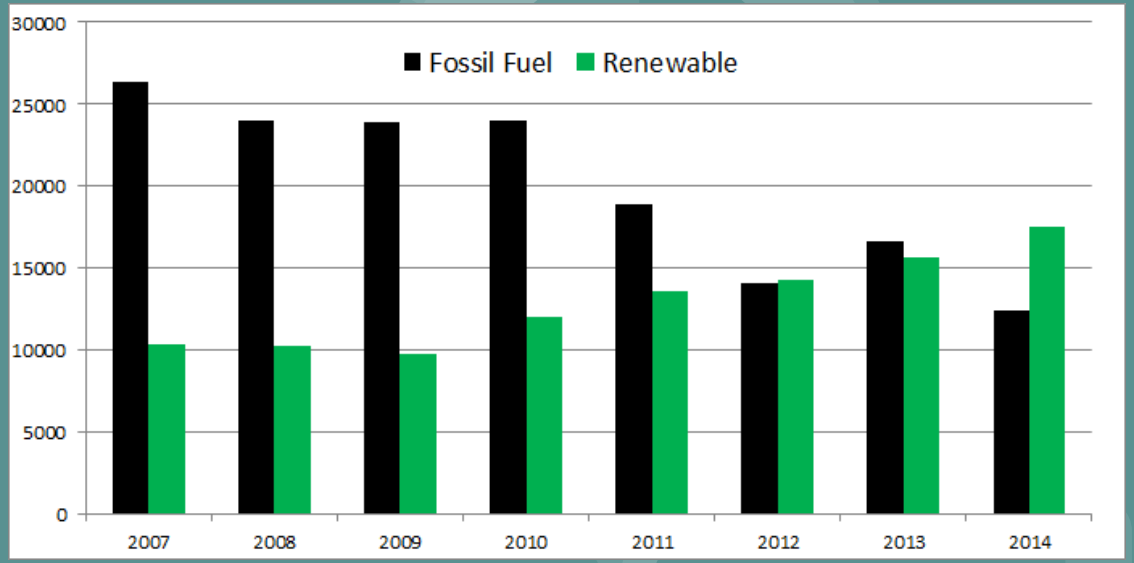


Financial Impact : ***reduced revenue*** from 1) decreased production capacity (interruptions to supply chain, making it difficult to adhere to planned production), resulting in decreased output available for sale 2) costly negative workforce impact (absentees due to health and safety), and from lowered demand for high-emissions G & S.

5. Climate-related risks and opportunties

1. Transitional Risks

Technological Risks - refers to the availability of substitute products with lower emissions offered in the market as alternative to “regular products” that doesn’t mitigate the business’ carbon-footprint, unsuccessful investment of new technologies (which induces a loss), or additional costs to transition to lower emissions technologies. Technological innovations to support the transition to a *low-carbon* & *energy efficient* systems can help or hinder the competitiveness of firms, because they affect how companies strategize to meet consumer demand for greener products or lowers their production/distribution costs to stay profitable.



Financial Impact : inventory obsolescence (reduced demand for existing G & S), additional research and development expenditures, additional capital investment in technological development (which may not pay off), cost to adopt more efficient processes (i.e from IT consultation).

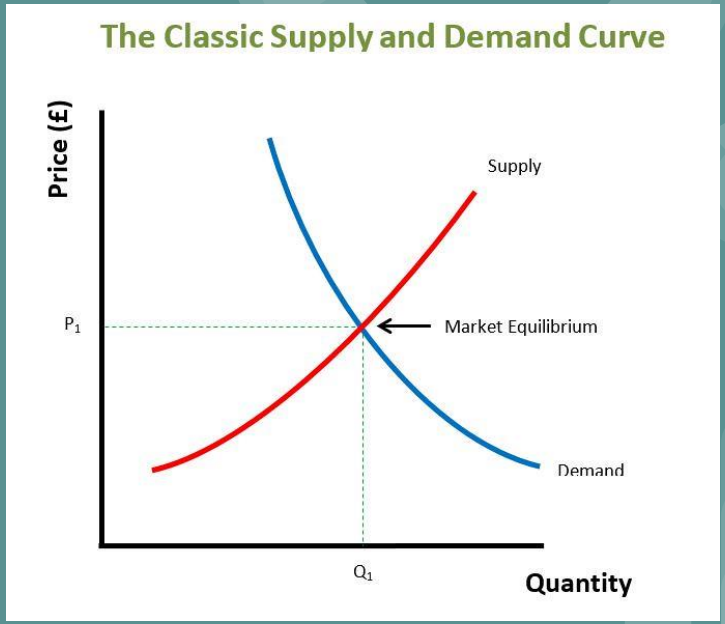
5. Climate-related risks and opportunties

1. ***Transitional Risks***

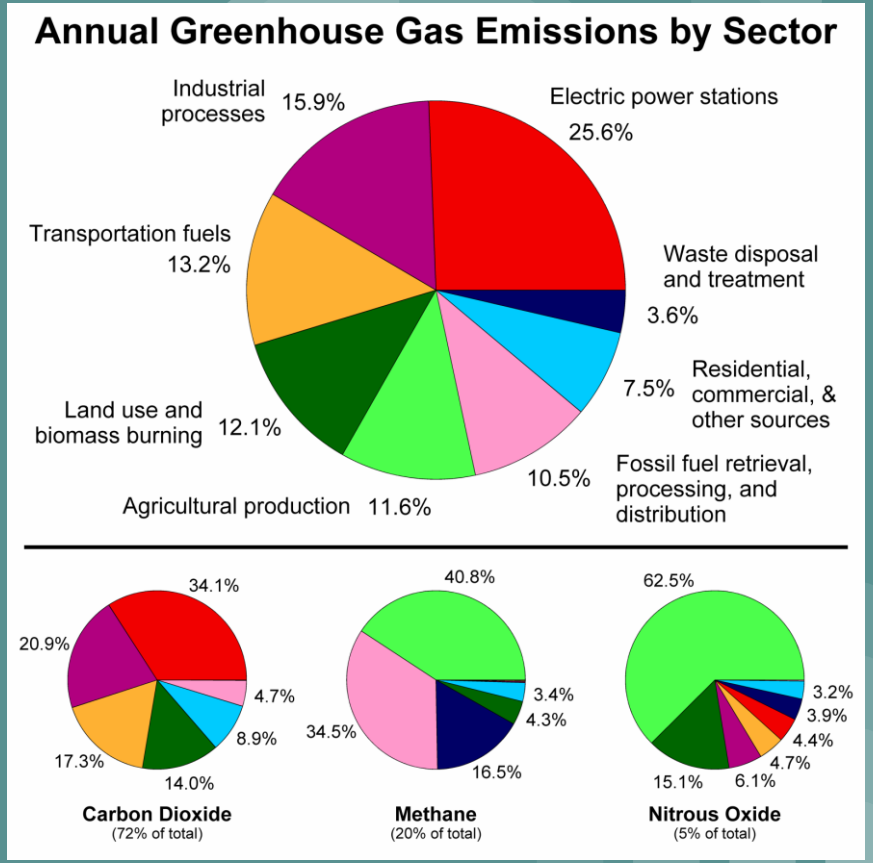
   Market Risks - refers to the shift in supply and consumer preferences for low-emission products and commodities, increasing input costs (raw materials) due to resource scarcity or supply chain interruptions, and uncertainties in market signals.

Some fossil fuel companies have already rebranded themselves as "energy companies" (such as Suncor or Royal Dutch Shell - a few of the "good" oil & gas companies who is on board with, rather than resisting, the global transition efforts) to distance themselves away from the negative perception of fossil fuels in light of climate change concerns. However, for these "energy companies", they still face the challenge of diversifying their product mix to include renewables to appease the demand in the energy market and account for any material information related to the measurement of and setting appropriate targets for their emissions.

Financial Impact: ***reduced revenue*** from 1) decreased demand for G & S from shift in consumer preferences, 2) change in revenue mix. ***Lower pricing of assets***, such as fossil fuel reserves, securities land valuations subject to these risks. ***Increased production costs*** from changing input prices; an abrupt shift in water or energy costs due to scarcity.



Risks & Opportunities from Climate-change (Transition slide)



Climate-Related Financial Disclosures: Risks in summary

- Policy and Legal Risk
- Technological Risk
- Market Risk
- Reputation Risk

...but also

- Physical risks: acute and chronic risks

Acute Risks - event driven, such as flood, hurricane, or forest fire.

Chronic Risks - the long-term change in weather patterns due to anthropogenic activities, leading to sea level rises or chronic heat waves.

Financial Impact of Physical Risks: ***Increased costs -*** insurance premiums skyrockets in high-risk locations, damages to facilities or early retirement of assets increase capital replacement costs, higher operating costs from inadequate water supply.

Climate-Related Financial Disclosures: Opportunities

- Resource Efficiency
- Energy Source
- Products and Services
- Markets
- Resilience

TCFD : One of the key climate-related opportunities is to diversify energy source – investment in renewable energy capacity has exceeded investment in fossil fuel generation.

The IEA warned that achieving global GHG emissions reduction goals entails divesting away from fossil fuel use. This will require countries to transit a major percentage of their energy generation to low emission alternatives such as wind, solar, geothermal, tidal, hydroelectrical, biofuels, as well as stop-gap measures such as Carbon Capture and Storage technologies until companies find a more feasible way to divest from fossil fuel use and replace with alternative energy sources.

Climate-Related Financial Disclosures: Opportunities

- ***Resource Efficiency***
- Energy Source
- Products and Services
- Markets
- Resilience

Resource Efficiency
Opportunity to reduce operating cost through reduced energy intensity (improved energy efficiency) in their production and distribution processes, buildings, machinery/appliances, and logistics.

Financial Impact: *improve profit margins* through lower operating costs and energy efficiency gains, *increased revenue* from producing at optimal capacity (no delays in planning approvals or supply chain interruptions), *fixed assets value appreciation* (rather than asset impairment).

Climate-Related Financial Disclosures: Opportunities

- Resource Efficiency
- ***Energy Source***
- Products and Services
- Markets
- Resilience

Energy Source
Opportunity for organizations to diversify their energy source or shift their energy generation to low emissions alternatives.

***Financial Impact*:** reputational benefit that drives demand, reduced exposures to GHG emissions from more efficient energy sources (less sensitive to carbon price increases), savings on annual energy costs (reduced operational costs), returns in investments on low-emissions technologies, increase capital availability from environmentally conscious investors (responsible investors and consumers are trending towards favoring low-emissions producers).

Climate-Related Financial Disclosures: Opportunities

- Resource Efficiency
- ***Energy Source***
- Products and Services
- Markets
- Resilience

The International Energy Agency has reported a major shift in investment in renewables capacity, which exceeded fossil fuel generation for the last 5 years. This is brought upon by a global trend towards decentralized clean energy sources with rapidly declining costs and improved storage capabilities, which led to significant subsequent global adoption of renewable technologies, which enables organizations to shift their energy usage toward low emission energy sources, which results in energy cost savings.

Climate-Related Financial Disclosures: Opportunities

- Resource Efficiency
- Energy Source
- ***Products and Services***
- Markets
- Resilience

Products and Services
Opportunity to diversity products and services by capitalizing on shifting consumer & producer preferences for low-emissions products. The carbon-footprint of the environmentally friendly product can also be exhibited in marketing and labelling in G&S, such as travelling, food & beverages, logistics services, printing, recycling, etc.

Financial Impact: increased revenue from 1) reputational benefit drives demand for offerings of low emissions G & S, 2) new solutions to adaptation needs (such as insurance risk transfer products and services), and 3) better competitive position to reflect shifting consumer preferences.

Climate-Related Financial Disclosures: Opportunities

- Resource Efficiency
- Energy Source
- Products and Services
- ***NEW Markets***
- Resilience

(New) Markets

Opportunity to diversity financial assets through green bonds and infrastructure, and products and activities through emerging markets, partly covered in Products & Services and Energy Source.

Financial Impact: increased revenue from accessing emerging markets through partnerships with government and development banks.

Climate-Related Financial Disclosures: Opportunities

- Resource Efficiency
- Energy Source
- Products and Services
- ***NEW Markets***
- Resilience

Opportunities for partnership: collaborate with governments, and small-scale local entrepreneurs working on low emissions products or energy source, or community groups to collaborate on transitioning to a lower carbon economy.

Opportunities for better capital access: through underwriting or financing green bonds and infrastructure that result in low-emission energy production, yields greater energy efficiency and better grid connectivity.

Climate-Related Financial Disclosures: Opportunities

- Resource Efficiency
- Energy Source
- Products and Services
- Markets
- ***Resilience***

Resilience

Opportunities around improving efficiencies, designing new production processes, developing new products, in order to preemptively plan adaptive responses to climate change and better manage climate risks and seize climate opportunities.

Financial Impact: increased ***market valuation*** through resilience planning on assets (infrastructures, land, buildings, etc); ***Supply Chain reliability*** with minimal interruptions under unexpected climate scenarios, ***new revenue source*** from new products and services related to ensuring resilience.

6. TCFD's Climate-related Disclosure Guidance

The task force structures its recommendations for *all sectors* around the themes of **GOVERNANCE, STRATEGY, RISK MANAGEMENT, & METRICS AND TARGETS (Consolidated Summary is below).**

To provide a complete picture of potential climate-related financial impact that isn't generic or boilerplate, the TCFD also provides supplementary guidance that provides *sector-specific* considerations for **FINANCIAL** & **NON-FINANCIAL** sectors in its ***Annex (supplementary document that supports implementing the recommendations.)*** which is outside of the scope of this presentation, but I invite any interested audience to peruse this document on the TCFD website.

DISCLOSURE RECOMMENDATIONS *(CONTINUED)*

The four recommendations are supported by **specific disclosures** organizations should include in financial filings or other reports to provide decision-useful information to investors and others.

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	**Recommended Disclosures**	**Recommended Disclosures**	**Recommended Disclosures**
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	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) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Climate-Related Financial Disclosures: Financial Statement Impact

TCFD proposed four major categories of Financial Impact, which in turn is reflected in the income statement, balance sheet, and cash flow statements of the organization given their exposure to specific risks or opportunities unique to them:

Figure 2

Major Categories of Financial Impact

Income Statement	Balance Sheet
Revenues. Transition and physical risks may affect demand for products and services. Organizations should consider the potential impact on revenues and identify potential opportunities for enhancing or developing new revenues. In particular, given the emergence and likely growth of carbon pricing as a mechanism to regulate emissions, it is important for affected industries to consider the potential impacts of such pricing on business revenues. **Expenditures.** An organization's response to climate-related risks and opportunities may depend, in part, on the organization's cost structure. Lower-cost suppliers may be more resilient to changes in cost resulting from climate-related issues and more flexible in their ability to address such issues. By providing an indication of their cost structure and flexibility to adapt, organizations can better inform investors about their investment potential. It is also helpful for investors to understand capital expenditure plans and the level of debt or equity needed to fund these plans. The resilience of such plans should be considered bearing in mind organizations' flexibility to shift capital and the willingness of capital markets to fund organizations exposed to significant levels of climate-related risks. Transparency of these plans may provide greater access to capital markets or improved financing terms.	**Assets and Liabilities.** Supply and demand changes from changes in policies, technology, and market dynamics related to climate change could affect the valuation of organizations' assets and liabilities. Use of long-lived assets and, where relevant, reserves may be particularly affected by climate-related issues. It is important for organizations to provide an indication of the potential climate-related impact on their assets and liabilities, particularly long-lived assets. This should focus on existing and committed future activities and decisions requiring new investment, restructuring, write-downs, or impairment. **Capital and Financing.** Climate-related risks and opportunities may change the profile of an organization's debt and equity structure, either by increasing debt levels to compensate for reduced operating cash flows or for new capital expenditures or R&D. It may also affect the ability to raise new debt or refinance existing debt, or reduce the tenor of borrowing available to the organization. There could also be changes to capital and reserves from operating losses, asset write-downs, or the need to raise new equity to meet investment.

Figure 1

Climate-Related Risks, Opportunities, and Financial Impact

Supplemental Guidance

In addition to guidance for all sectors, the Task Force developed **supplemental guidance** for financial and non-financial organizations to assist those organizations in implementing the recommended disclosures.

Financial Industries

- Banks
- Insurance Companies
- Asset Managers
- Asset Owners

The financial sector was organized into four major industries largely based on activities performed. The activities are lending (banks), underwriting (insurance companies), asset management (asset managers), and investing (asset owners).

Non-Financial Groups

- Energy
- Transportation
- Materials and Buildings
- Agriculture, Food, and Forest Products

The non-financial groups identified by the Task account for the largest proportion of GHG emissions, energy usage, and water usage.

7. TCFD's recommendations – Status of Adoption

In the ***TCFD's 2019 status report***, transparency in *pricing risk (i.e a decline in crude oil PricesPerBarrel)* related to climate change is strongly encouraged for vulnerable companies, particularly in the transportation or energy sector (but impact also extends significantly to financial sectors), to support efficient capital allocation decisions.

Since then, 785 businesses and global financial firms jointly owning assets valued at $118 trillion dollars, has either supported or adopted TCFD on a voluntary basis.

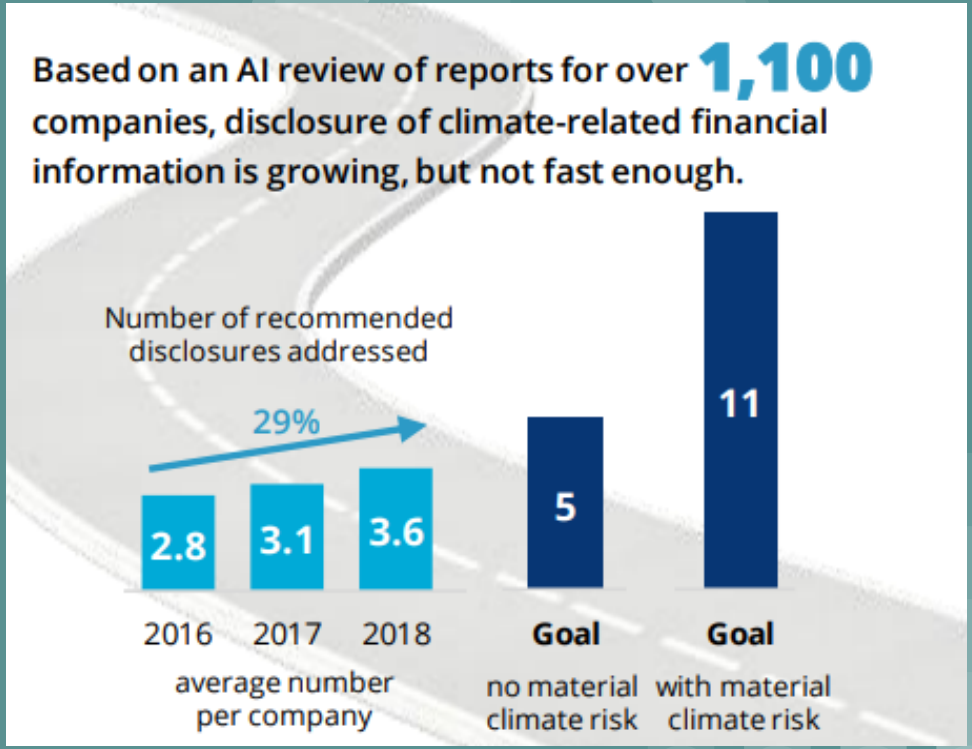
An example of declining Crude Oil prices on the NASDAQ for the past 5 months (trending downwards – demand has peaked!) →

7. TCFD's Status Report (2019)

Scope of analysis: 1,126 companies are surveyed across 142 countries in 8 industries since 2017 (past 3 years).

The purpose of the status reports is to analyse the *current alignment* of disclosures in the sampled companies' financial reports with the Task Force's recommendations. The survey also assesses the *current adoption progress* of the task force's recommendations globally.

There has been a 15% increase to the availability of disclosure, but the report critiqued the lack of quality and consistency in current disclosures, which does not enable these disclosures to be decision-useful. Main reasons are due to challenges that reporting entities face when implementing scenario analysis and describing resilience strategies towards the climate-risks that affects the firm's operating environment and performance.



7. TCFD's Status Report (2019)

Some observations on the shortcomings of disclosure quality includes:

1) *Not enough companies disclosed DECISION USEFUL disclosures related to climate change, in general;*

2) lack of clarity on the potential financial impact of climate-related issues on reporting entities,

3) lack of disclosure on the resilience of corporate strategies across a range of climate states, from companies who used scenario-analysis to conclude that climate risks are material (companies are new to implementing them),

4) that EFFECTIVE DISCLOSURE requires the efforts multiple functions: finance, risk management, even natural science and engineering.

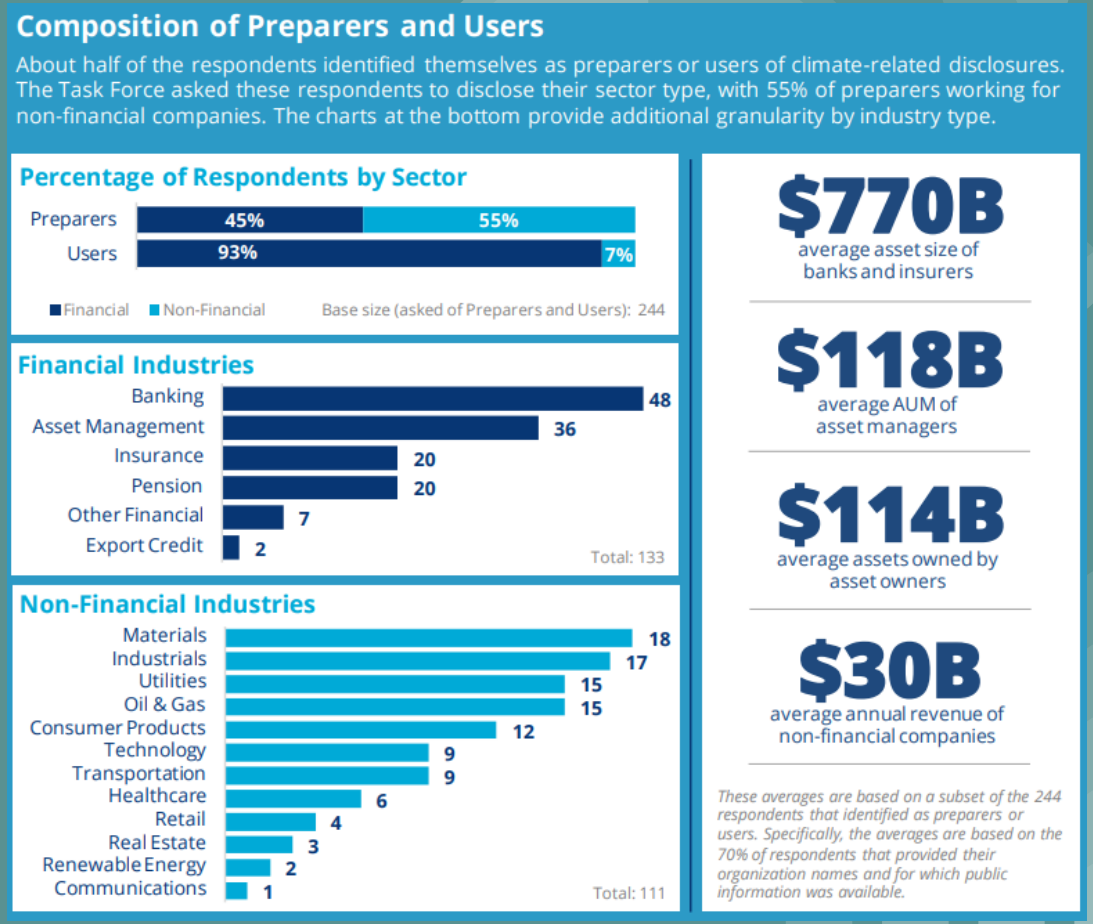
Figure 4

AI Review Population Size

Industry	Number
Banking	104
Insurance	147
Energy	128
Materials and Buildings	213
Transportation	223
Agriculture, Food, and Forest Products	166
Technology and Media	63
Consumer Goods	82
Total	**1,126**

TCFD's Status Report (2019)

- 50% preparers, 55% of which works for *non-financial* companies.
- 50% external users, over 90% works for *financial* companies.
- Financial sector is grouped by activities: lending, investing, underwriting…etc
- Non-financial sectors



TCFD – Status of Adoption

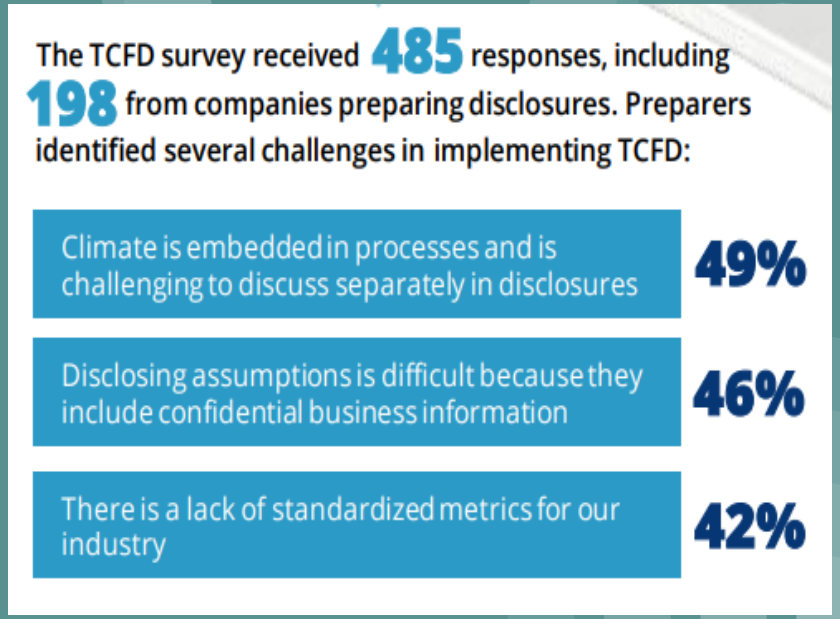
INSUFFICIENT DISCLOSURES

TCFD warns that "given the speed at which changes are needed to limit the rise in the global average temperature—across a wide range of sectors—more companies need to consider the potential impact of climate change on their businesses, strategy, and financial planning and disclose material findings." However,

No disclosures aligned more than 50% of recommended disclosures in total;
"Governance" & "Risk Management" is among the lowest disclosures provided (with an average of 20%-30% of total requirement);
"Strategy" and "Metrics and Targets" also saw insufficient disclosures (an average of 30%-40% of disclosures within the samples.)

Only 25% aligned with 5/11 recommendations, and only 4% disclosures aligned with at least 10/11 recommendations in 2019 status report; This is an improvement from the 2018 status report, which reported overall alignment in only 1/11 recommendation (not sure if the survey is conducive to trend or comparative company analysis on a case-by-case, because I don't know if the same companies are surveyed).

Contrary to the TCFD's recommendations to include climate disclosures in public annual financial filings, actual disclosures sampled are made in different locations, including somewhere in the Comprehensive Annual Financial (integrated) Reports (CAFR), voluntary disclosures or sustainability reports;



TCFD – Status of Adoption

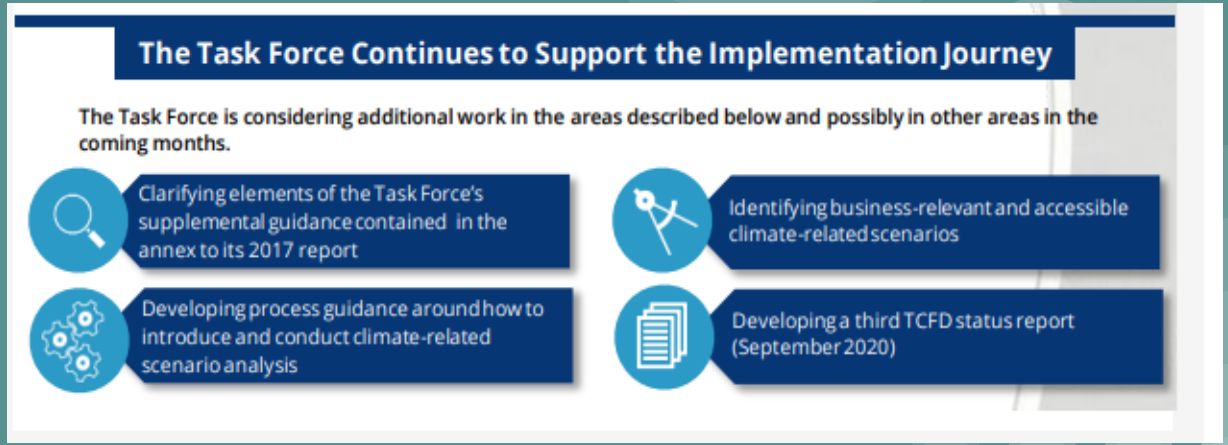
- Low disclosures on the resilience of company's strategy, regardless of reporting entity's revenue size or region of operations.

- Implementation Challenge: Resilience strategy requires taking into consideration different climate related scenarios, including a 2 degrees Celsius scenario.

  Remedy: Next status report will address this

- Technological challenge: lack of available disclosures to train AI to preform analysis on disclosure alignment with recommendations.

  Remedy: more companies need to adopt.



8. Environmental Liabilities – ExxonMobil Case study

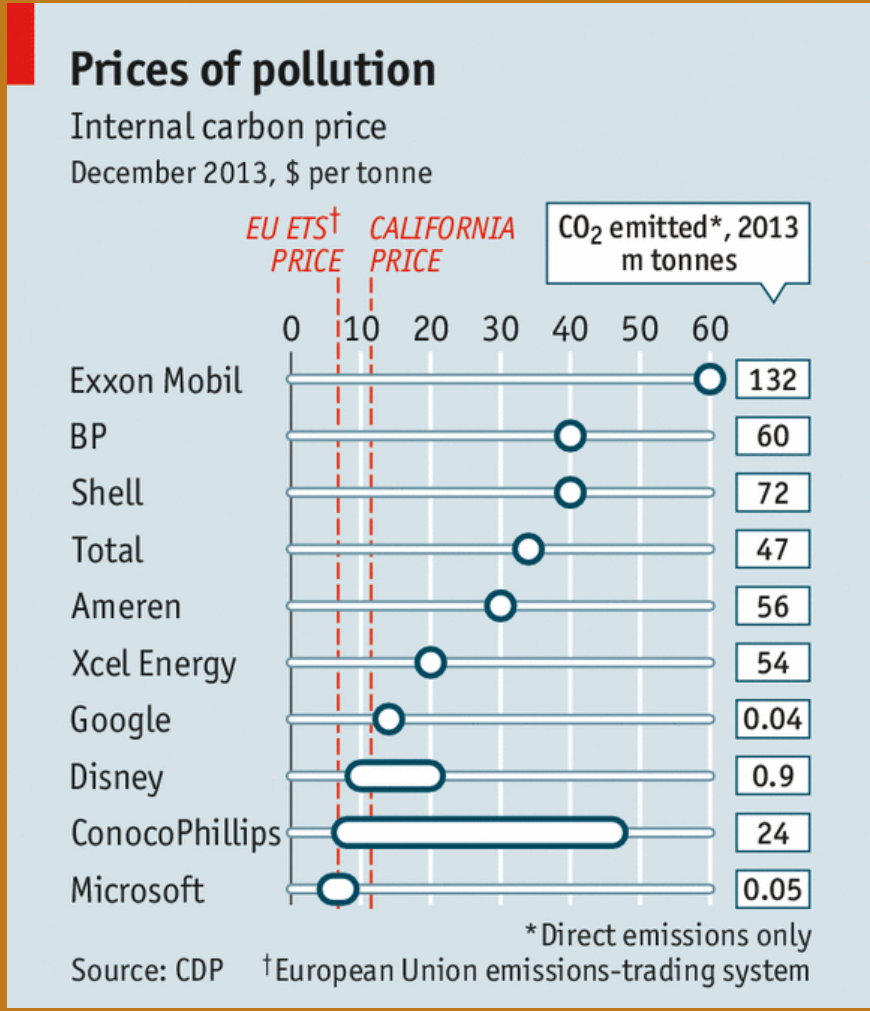
According to Climate Case Charts & Bloomberg, the State of New York is currently seeking an order to prohibit ExxonMobil from continuing to make misrepresentations, and is undergoing legal proceedings to force ExxonMobil to correct its past misleading claims to investors.

The New York State is also seeking relief, including disgorgement of all profits derived from the alleged fraud, to prevent Exxon from making false or misleading claims about its risk management towards climate issues.

NYAG's complaint alleges that Exxon in effect committed securities fraud with Rex Tillerson's approval, due to financial overstatements, deliberate misapplication of proxy costs, and other misleading representations. Exxon used misleading proxy costs to avoid projecting over $7 billion of GHG-related expenses by 2040, even though it would be a more accurate depiction of their financial position by then. Since the misleading proxy costs depicts a much better financial position than is actually the case, Exxon's financial vulnerability to climate change is much greater than what the investors are led to believe.

Proxy Cost [explanation]: "a cost included in the economic projections as a stand-in to simulate the likely effects of expected future events." According to Exxon's 2016 Proxy Statement under a Risk Management report, these proxy costs sought to reasonably reflect the future regulations that will impact the exploration, transportation, production, or use of carbon-based fuels and is applied to all Exxon's business segments for incorporating GHG costs into their accounting of capital investments. (However, the statement isn't true because Exxon had another proxy cost that led to a much more favorable reporting of their overall financial position.)

Most of Exxon's shareholders invests for the long term, and included in state pension funds are Exxon shares held on behalf of teachers & retirees. Private and public pension funds own nearly ⅛ of all oil and gas companies, with mutual funds and individual retirement plans account for more than 40% of total Oil and Gas shares in holdings.

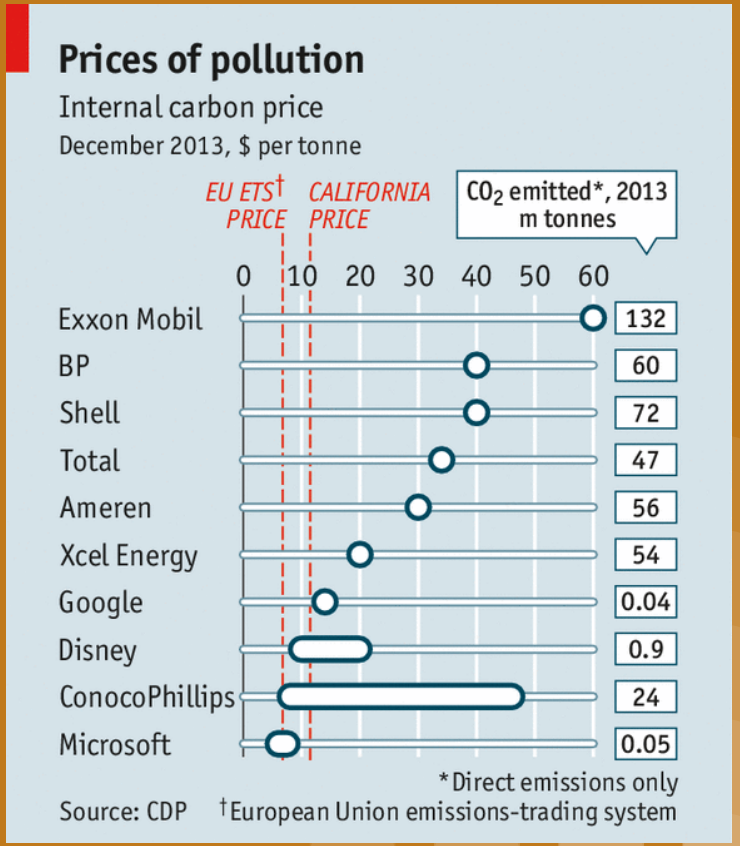


NY Attorney General alleged that Exxon's use of proxy cost is just an "illusory risk management tool",

According to the NYAG, Exxon's fraud impacts the New York state's common retirement fund, which holds $1.5 billion worth of Exxon's shares that belongs to millions of employees, teachers, and retirees. However, ExxonMobil is the largest Oil & Gas company in the world, and many other financial institutions and pension funds also has a stake in its ownership, as discussed below.

Exxon's top three institutional investors are:
The Vanguard Group ($5.3 trillion Assets Under Management),
BlackRock Inc ($6.84 trillion AUM), and
State Street ($2.5 trillion AUM).

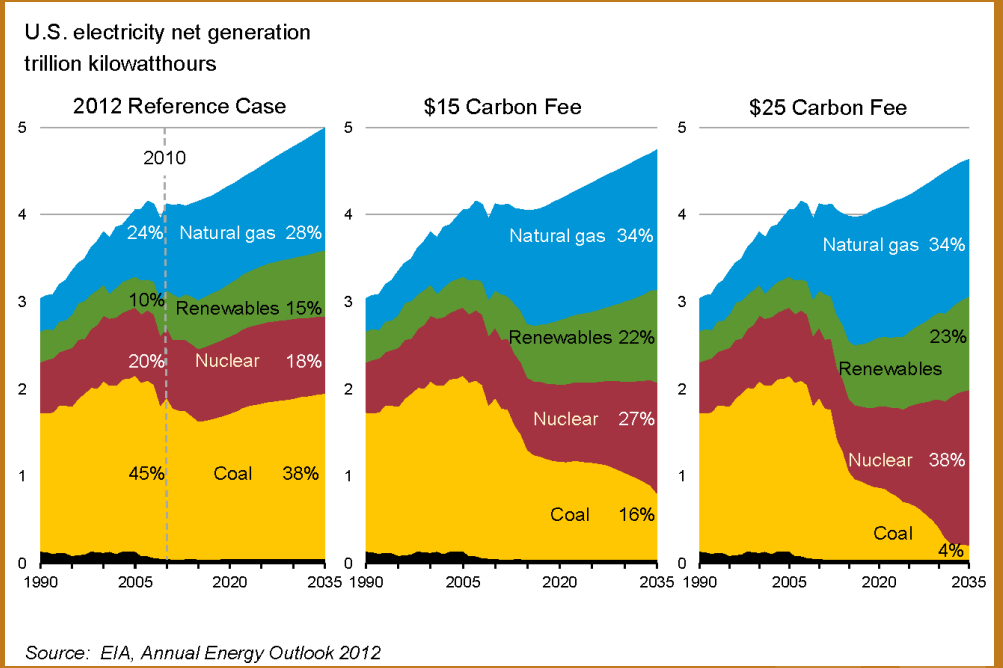
These groups have signed the UN's PRI, with the intent to incorporate ESG issues into their investment analysis with "Climate change" being the top priority.



But also included in Exxon's investors are the New York institutional investors, which are:

NY State Common Retirement Fund & Teacher's Retirement System (Exxon shares valued at $900 million and $500 million),

New York State Pension Fund ($700 million) & Other pension funds (Exxon holdings are valued at $6 billion.)



Financial Misrepresentation:

ExxonMobil™

If the investors took the status quo, they will also sustain current problems

Sustainable Development Goals

HAPPINESS

Three Ways to Happiness Bridging 3 Divides - Tri Hita Karana

UN SDSN SEA hub @ UID Creative Campus Kura Kura Bali

The Helix of Sustainability

But the world (including current investors) wants to head towards this future:

Plants grow, making sugars, starches, oils, cellulose and other complex molecules from simple raw materials, mostly water, CO_2 and sunshine.

In addition to harvesting food, people extract fuel and base materials for industry and commerce.

Manufacturers make wares, measuring profitibility in environmental and social terms as well as financial.

The end-user reuses and repairs, only recycling after as long a useful life as possible.

At the end of its life the article decays, reducing large complex molecules to simple raw materials by the action of bacteria and fungi - composting

Plants grow, making sugars, starches, oils, cellulose and other complex molecules from simple raw materials, mostly water, CO_2 and sunshine.

Financial Misrepresentation:

ExxonMobil™

The fraud was sanctioned at the highest level of Exxon.

Rex Tillerson, the former CEO, was aware that the *lower proxy costs were applied internally while the higher proxy costs were represented to the public*.

When an Exxon manager blew the whistle, Exxon reconciled its public proxy costs (which depicted a more accurate representation) to align with its internal policy of using the lower proxy costs, only to discover that the higher proxy costs (of course) leads to:

- massive GHG costs,
- huge asset impairment and write downs, which will result in
- a significant reduction in valuation of reserves.

Exxon's response was to use "alternative proxy costs" applicable to only a fraction of Exxon's emissions to avoid reporting massive GHG costs that would worsen their reported financial position.

Financial Misrepresentation:

ExxonMobil™

i) ***Imperial Oil*** – *Alberta*: Exxon has 14 projects in alberta that collectively resulted in an understated cost of $25-32 billion; one of the project, “Cold Lake” understated proxy costs by as much as 94%, and projected a reduction in asset’s useful life by 28 years, which can result in billions of lost revenues (reducing anticipated future economic benefit from continued use of asset).

ii) ***Two sets of books*** - *“publicly represented proxy costs” vs. “internal proxy costs”*:

Prior to 2016, Exxon failed to apply the public proxy costs consistently to assess long-lived asset impairment, such as oil & gas production sites and the anticipated future economic benefit expected to derive from using these assets. However, to its investors, Exxon reported applying proxy costs across all businesses in its impairment evaluation, which is a violation of the Accounting Principle’s consistency and conservatism under the Conceptual Framework for financial reporting.

iii) **No stranded asset?** Exxon’s financial reporting asserted that its assets face little risk of becoming stranded under a 2 degrees’ Celsius scenario from anticipated future stringent regulations. However this was a lie, since Exxon and its own financial planners are evidently aware of the massive write-downs that would ensure if they accounted for GHG using the public proxy costs represented to investors, which would have resulted in the "reduction in the estimated volume of company reserves.”

iv) **Putting investors at risk**: Exxon continues to invest in these overvalued assets and shows no indication of divesting in their financial reports, which means Exxon will continue to expose its investors to loss of value from Exxon’s stranded assets (assets suffering from unanticipated or premature writedown, devaluation, or conversion to liability) - by price or a drop in demand (oil demand will peak by latest in 2020, according to IEA).

“Alberta’s carbon tax is particularly relevant to Exxon; through its Imperial Oil Subsidiary, Exxon has substantial investments in Alberta’s oil sands. The oil sands consist of large reservoirs of bitumen, a tar-like substance which functions as an alternative to crude oil, but which requires more energy to produce and process, and is thus more GHG-intensive, than conventional crude.” - pg 12

Closing Remarks:

So based on what I've learned thus far from a sustainability standpoint, everything happens as a series of cause and effect, and it's the prudent planner who can anticipate the longer-term impact will stay in business. The problem with profit-oriented reporting objectives or motives, is that profits only exist as evidence of the organization's legitimacy to serve a social purpose of supplying consumer demand for G&A (similar to that employees gets salaries, benefits and other remunerations for the labor they contribute to their employer.)

However, if that's the sole focus of the organization's financial reporting and strategic objective, then someday it will inevitably run into conflict with social interests, and depending on the scale of conflict and disruption it causes in the community that the organization operates, this can erode business' reputation as well as public trust in the credibility of their financial report, and therefore demand will drop when the organization is no longer perceived as desirable, which can cause firm value to drop – as a series of cause and effect.

I also learned that voluntary reports such as sustainability reports helps us understand if the organization will eventually last and its existence continue to be desirable to the public, so that it continues to operate with legal and social impunity (since it's not doing anything wrong, illegal or harmful.)

Appendix

Charles H. Cho, Dennis M. Patten, (2007) "The Role of Environmental Disclosures as tools of legitimacy: A research note." Journal: Accounting, Organizations and Society. Volume 32, Issue 7-8, pp 639-647. DOI: https://doi.org/10.1016/j.aos.2006.09.009

New York Attorney General's Complaint - 10.24.2018
*Highlights the importance of accounting for climate change in financial reports and discusses Exxon's financial misrepresentation to investors concerned about climate risks.
http://climatecasechart.com/case/people-v-exxon-mobil-corporation/

TCFD's Recommendations - 2017.
*Provides guidance on reporting company's governance, adaptation and mitigation strategies re. Climate risks, and scenario analysis on how these strategies impact firm's *long-term value* in the future.
https://www.fsb-tcfd.org/

TCFD's 2019 Status report:
https://www.fsb-tcfd.org/publications/tcfd-2019-status-report/

Carbon Disclosure Project:
https://www.cdp.net/en

Appendix

Online Resources:

Risk Matrix: https://en.wikipedia.org/wiki/Risk_matrix

CPA Canada - Climate Change & Financial Disclosure - Overview of TCFD's Recommendations:
https://www.youtube.com/watch?v=kEopo5G85Bs&fbclid=IwAR2n4sMZx1LzXpg0_D4HI2rIS4HevVCmdaeRxoTe5V2FDdg0Ay2rTYLqQKo

Shareholder's resolution:
https://smallbusiness.chron.com/shareholder-resolution-66531.html

Are you eligible to vote?

If you are, and climate issues are important to your generation, think about which party is taking action and how it will affect your future...

We have an election coming up on October 21st

(Your vote counts.)