

Recent policy developments and the rise of climate-related securities disclosure

ACC Conference – May 8, 2017



Laura Zizzo
Founder and CEO

Topics We Will Cover

- Overview of Climate Impacts
- International and National Legal Drivers
- Securities Disclosure
- Investment Trends/Drivers
- Risk Management Strategies and Tools

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Metrolinx interests:

Resiliency, green energy, biodiversity

Resiliency and climate risk for public infrastructure and land-use planning

Metrolinx 5 sustainability goals:

1) Climate resiliency 2) reduction of energy use and emissions 3) integrate sustainability in supply chain 4) minimize impact on ecosystem 5) enhance community responsibility

Interesting that the first goal is to set strategies, but largely undefined metrics for success – this is a challenging area so we are hoping to give you some food for thought that can help embed thinking about climate risk across the organization and driving towards resiliency.

Goal here is to provide some food for thought on what is happening in the private sector around identifying and disclosing climate related risk so you are aware...organizations like metrolinx will continue to help lead the understanding of these risks and opportunities.

There are a host of existing drivers and tools to help identify, manage, disclose these risks – but lots of noise and developments so my goal is to give a crash course on climate policy developments and thinking about this from a financial disclosure perspective...

Zizzo Strategy Inc.

- Climate change is re-defining risk management, legal liabilities and business imperatives
- We are a multi-disciplinary strategic consultancy firm
 - Drawing on law & policy, engineering, science, accounting
- We help to:
 - Understand critical issues
 - Create frameworks to enable better decision making
 - Implement effective and efficient solutions

Client groups include:

- Asset owners, builders and operators
- Industry Associations & Not-for-profits
- National and regional governments
- Utilities
- Financial services & institutional investors



Climate Change Impacts Business

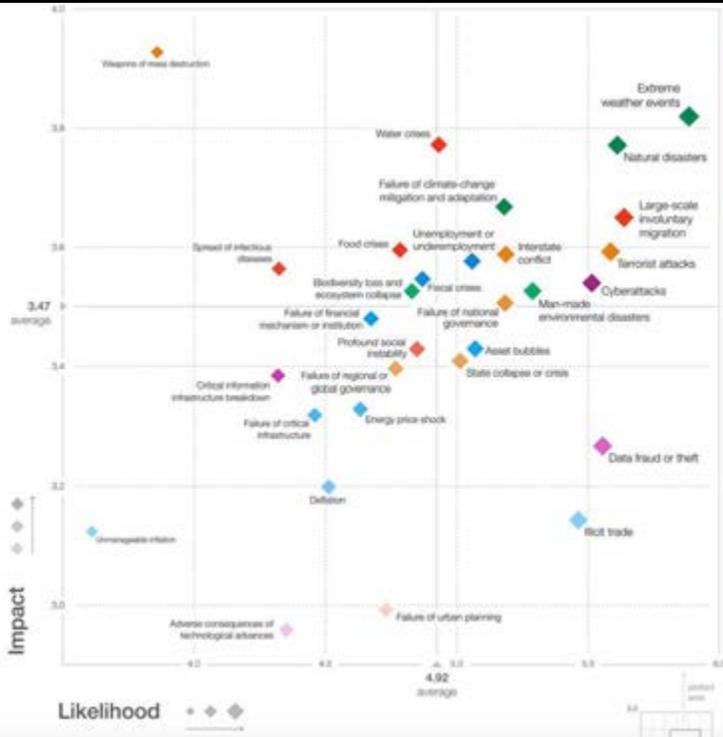
Significant Economic Impacts of Climate Change Increasingly Recognized

- Bank of Canada warns that estimated **cost of inaction could be \$21-43 billion/year by 2050**
- Insurance sector feeling impacts
 - Extreme weather payouts rose to \$3.2 Billion in 2013
 - 2016 Fort McMurray Fire = \$3.58 billion alone
- "Trillions" at stake in move to low-carbon economy
 - **Global low-carbon market of >\$5.8T and projected to grow at 3% per year**
- World Economic Forum named climate change top trend in 2017 Global Risks Report
- Investors, stock exchanges, securities regulators, rating agencies pushing for **enhanced climate-related disclosure**
- Financial Stability Board – Task Force on Climate Related Financial Disclosures
 - Mandate to improve and standardize the integration of climate change in financial reporting

Federal and provincial policy developments responding to these trends and showing opportunity for Canadian leadership in the transition to a low-carbon and climate resilient economy

World Economic Forum

The Global Risks Report 2017 12th Edition



Categories

- ◆ Economic
- ◆ Environmental
- ◆ Geopolitical
- ◆ Societal
- ◆ Technological



Potential Climate Impacts



<ul style="list-style-type: none"> • Increasing precipitation & intensity of storms • More frequent severe freezing/thawing cycles • More frequent intense summer heat days • Fluctuations in water availability and quality • Sea level rise 		<ul style="list-style-type: none"> • Increased costs due to impacts on physical assets & potential legal liability • Significant need to adapt
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- **Interesting that Oakville has observed and projected increases and possible impacts (p15 of the Climate Change Primer)**
- **Water Quality –**
- Lowered water levels or decreased river flows could lead to poor drinking water quality. Many municipalities rely on surface water supplies, leaving them exposed to declines in water levels, and increased risk from contamination; resulting in the need for greater level of water treatment (NRCan’s From Impact to Adaptation: Canada in a Changing Climate, 2007)
- **More storms** events such as flooding, ice storms, heavy winds and tornadoes
- **Finch**
- **- 500m damage**
- **Municipalities responsible**
- **water supply and storm water management, transportation, public health and sometimes the delivery of electricity**
- **These responsibilities are implicated when we talk about storm water impacts, if municipalities are providing these services, they have to do it in a way that’s not negligent, and one of the parts that determines negligence is reasonable foreseeability, the concern from a municipal perspective is that foreseeability is changing as we have more frequent and intense storms and we should all be preparing and shoring up our systems accordingly**

Economic Risks: Floods of 2013

Toronto



Photo courtesy of Tom Ryaboi

INSURABLE?

Calgary



Photo courtesy of the Canadian Press



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2013 saw 3.2 b of insurance claims related to extreme weather
Canada's two biggest cities, Toronto and Calgary saw significant flooding after extreme weather events in the summer of 2013.

Clean up and repair after the fact is very expensive and thus, municipalities have a strong incentive to invest in improvements to current infrastructure:

- The Calgary flood repair cost is over \$500 million with potential of more costs in the future.
- The Toronto flood cost over \$60 million.

Furthermore the flooding is costing insurance companies significant amounts of money:

- The Calgary flood cost insurance companies \$1.7 billion.
- The Toronto flood cost insurance companies \$850 million.

These costs are significant considering the fact that Canadian insurance companies do not cover water damage caused by overland flooding so presumably, there are damages that were not covered by insurance companies. Where will these people go for compensation?

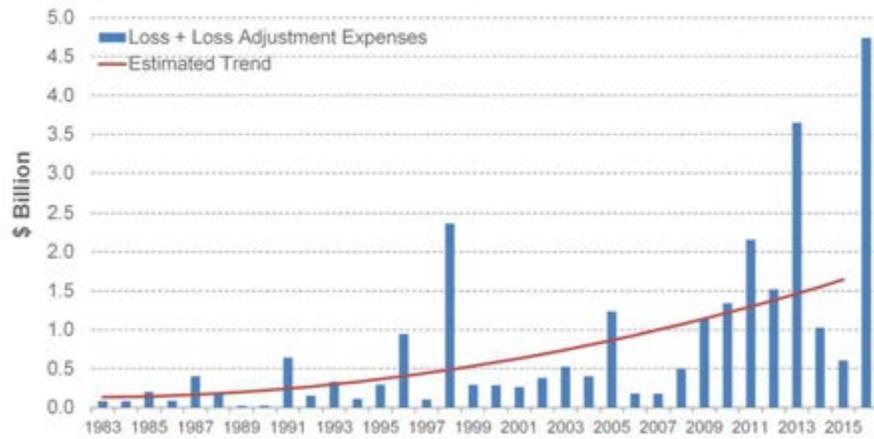
Existing municipal infrastructure is aging and the paved urban landscape does not

allow for sufficient water permeability necessary to mitigate the torrential downpours caused by climate change. Insurance executives are willing to consider offering overland flood insurance, however, policies cannot be drafted and premium levels cannot be set until proper maps that accurately identify the new risks arising from a warming planet are developed. However, most flood maps in Canada were created in response to a project commenced in the 1970's and the updating of the maps was abandoned in 1992. Insurance executives also agree that cooperation to share costs between insurance companies (and the government) in developing flood maps is a precursor to the implementation of overland flood insurance.

Insurance info from the report "[Assessing the Viability of Overland Flood Insurance: The Canadian Residential Property Market.](#)

Risks Related to Climate Impacts

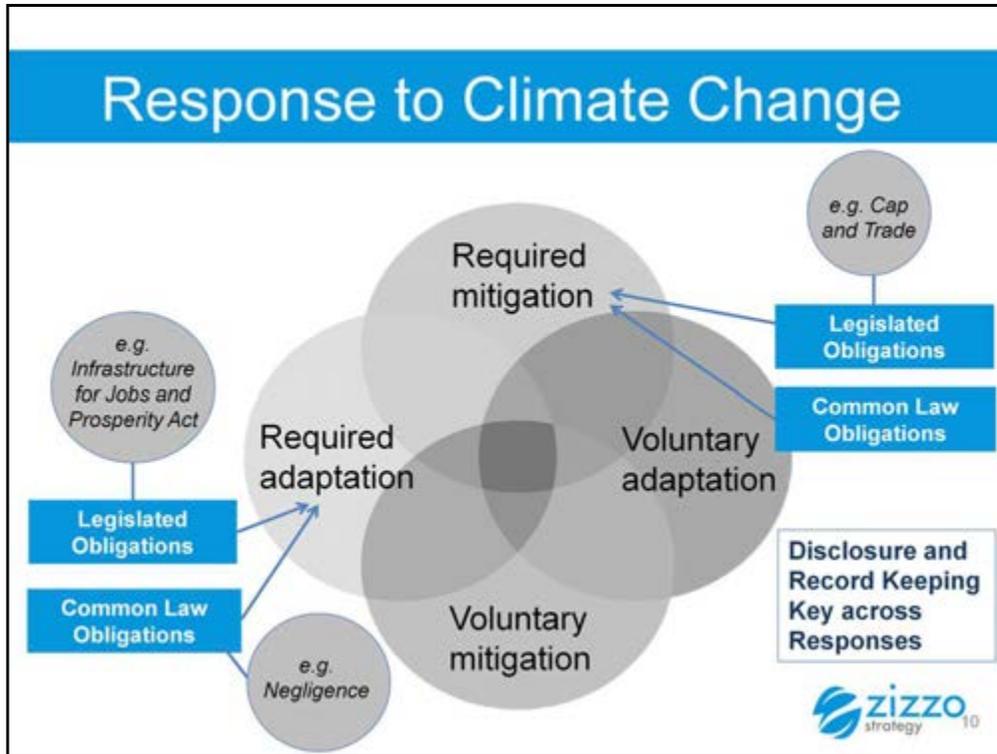
Catastrophic Insurable Losses in Canada (in billions of 2016 dollars)





At the end of September 2013, the IPCC released their Fifth Assessment Report. The Report confirmed, with 95% certainty, that humans are responsible for the observed global warming and that the climate is changing on a global scale, including an increase in extreme weather events. The report indicated that heavy precipitation events are very likely to become more intense and more frequent by the end of the century.

With the likely increase in extreme weather and heavy rainfall, municipalities will need to adapt to climate change by investing into infrastructure improvements, especially since insurance companies are not willing to bear these costs on their own. If individuals hurt by extreme weather events are not able to seek damages from insurance companies, they will go after governments.



Ontario *Infrastructure for Jobs and Prosperity Act, 2015*

Infrastructure should be designed to be resilient to the effects of climate change

Context

COP 21 Cop 21 (private sector attention/task force on climate risk – be able to understand and communicate risks and impacts/potential impacts on operations)

Outcomes Increasing integration of climate change in legislation, tort law and securities law

Materiality (51-333, SEC, Ceres Report)

Material risk from regulations/impacts

Market movement (oil down, renewables surging)

Reporting around the globe

Jurisdictional Context



Ontario businesses will be challenged to understand the global direction, national and provincial policies, regional and local realities. Issues like investor information, supply change management, effect of climate impacts on operations, all need to be strategized – and fast

COP 22 in Marrakech

From Agreement to Implementation

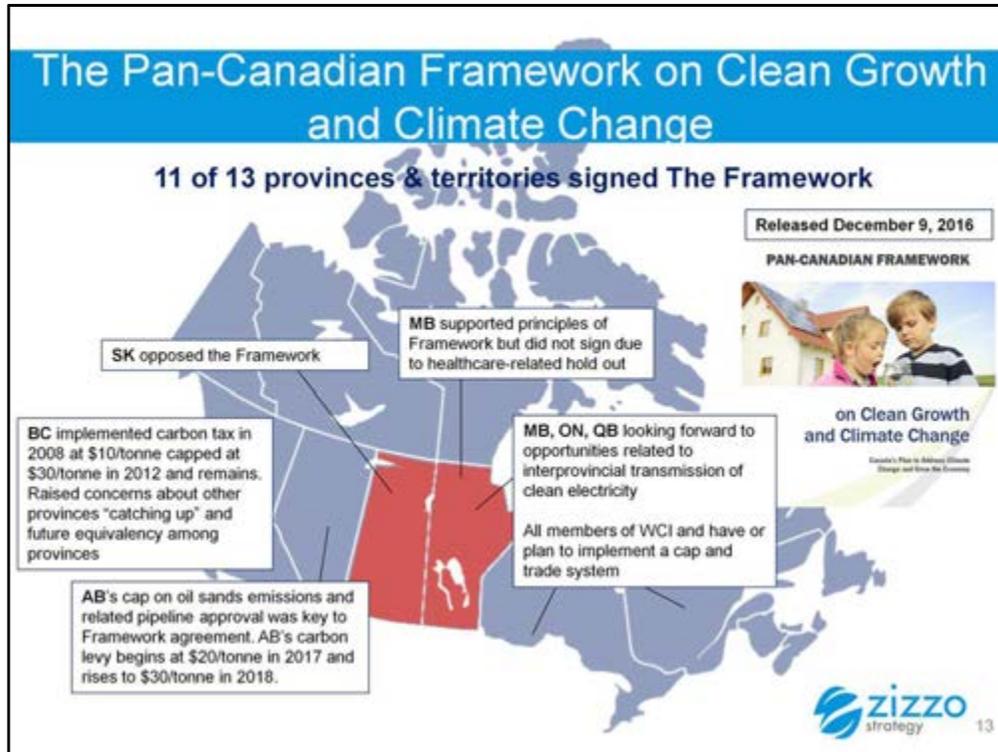
- Pairs Agreement formally ratified
 - Enforced November 4th, 2016
 - Goal: limit warming to well below 2°C above pre-industrial levels and pursue efforts to limit increase to 1.5°C
 - Decarbonization of economy in second half of century
 - 5 year global stock takes, national determined contributions
- Dealt with problems of transparency, next steps towards implementation
- Role of sub-nationals front and centre!
- Action from NGOs and private sector
- Despite Trump election, momentum is unstoppable



Canadian Minister of the Environment and Climate Change, Honorable Catherine McKenna (middle) speaking at the conference

"Global Momentum is Unstoppable"

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Date

Milestone

March 3, 2016

Vancouver Declaration launches Pan-Canadian Framework development

Working Groups established and consulted in four key areas:

Carbon Pricing

Mitigation Opportunities

Impacts and Adaptation

Clean Tech & Innovation

September 2016

Working Group reports released

October-November 2016

Federal policy announcements included:

Commitment to national carbon price

Low carbon fuel standards

December 9, 2016

First Ministers Meeting and final Pan-Canadian Framework released

Framework includes high-level strategies, concrete actions and spending commitments

- Framework organized around Working Group pillars
 1. Carbon pricing
 2. Other emissions reduction measures
 3. Adapting to climate change and building resilience
 4. Accelerating innovation, clean tech and job creation
- Each pillar includes discussion of:
 - High-level strategic priorities
 - Relevant case studies and successful project examples
 - New actions federal and/or provincial and territorial governments will take
- "Actions" range from concrete (e.g. develop model building code by 2030) to vague (e.g. explore ways to collaborate)
- Commits to reporting on progress in transparent way, details not yet developed
- >\$81 billion in new federal commitments plus \$35 billion to create the Canada Infrastructure Bank on top of billions already committed in 2016 budget

Opportunity for private organizations to convene and mobilize for additional emissions reductions to reach targets

[insert information on Targets to notes, easily understood]

Provincial Patchwork

- Cap and Trade
- Baseline Credit
- Carbon Tax
- Adaptation and resiliency initiatives
- Municipal leadership



Cap and Trade Began January 2017 in Ontario

Caps emissions of covered sectors (almost full economy other than waste, agriculture, forestry)

Setting the cap:

- 2017 cap based on best estimate of 2017 emissions: 142,332,000 T CO₂e
- Cap declines by between 4-5% per year during the first Compliance Period (2017-2020)
- Only part way towards our targets of 37% below 1990 by 2030, 80% by 2050

First Auction March 22, 2017 raised \$472M

- 100% of 2017 vintage sold for \$18.08/T
- 26% of Future vintage sold for \$18.07/T

Source: MSDEFCC, The Québec Cap and Trade System for Greenhouse Gas Emissions Allowances

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Cap and Trade Participants:

Mandatory participants (>25K T CO₂e/year) – Electricity imports, industrial and large commercial, institutions, transportation fuel, distribution of natural gas are covered under cap and trade

Voluntary participants (10K-25K T CO₂e/year) – Can “opt-in” to cap and trade; not required to have emissions reports verified

Market participants – Entities with no reporting or verification requirements, but who wish to purchase and sell emissions credits

Sectors not covered by cap and trade – Forestry, agriculture, waste (potential participation through offset projects)

Ontario GHG Reporting Regulation requires emissions report from facilities with annual GHG emissions >10,000 T CO₂e

- O. Reg. 452/09 was enacted under the Ontario *Environmental Protection Act*
 - Reporting

- Threshold: 10,000 tonnes of CO₂e emissions annually (similar to Quebec and California.)
- Verification
 - Threshold: 25,000 tonnes of CO₂e emissions annually.
 - Accredited third party must confirm report is accurate.

Mandatory Participants:

Covered

Electricity imports

Industrial and large commercial (e.g. manufacturing, steel, pulp and paper)

Institutions

Transportation fuel

Distribution of natural gas (captures electricity indirectly)

Voluntary Participants

- Certain entities can “opt-in” to cap and trade
- Eligibility: annual GHG emissions of 10K-25K tonnes who are required to submit emissions reports but are not required to have them verified
- Provides entities with ability to manage their compliance obligations and their carbon costs

In addition to the mandatory participants identified above, the Regulation allows certain entities to opt into the cap and trade program as “voluntary participants.” Specifically, entities with annual GHG emissions of 10,000-25,000 tonnes who are required to submit emissions reports but are not required to have them verified can choose to opt-in as voluntary participants.

Market Participants

- Entities with no reporting or verification requirements, but who wish to purchase and sell emissions credits
- Eligibility:
 - A person who is not an owner, operator or employee of a mandatory or voluntary participant may apply

Not covered

Forestry

Agriculture

Waste

Purchase and Sale of Allowances:

- Emissions allowances may be bought and sold in one of three ways:
 - Auctions (by Minister)
 - Held quarterly
 - First auction Ontario only, then held jointly with Quebec and California
 - Sales (by Minister)
 - Likely for price containment purposes
 - Transfers between registered participants (i.e. trading)

Legislative framework set out in Climate Change Mitigation and Low-Carbon Economy Act, enshrines climate targets in legislation

- 2020 – 15% below 1990 levels
- 2030 – 37% below 1990 levels
- 2050 – 80% below 1990 levels

Minister creates allowances and the max number “shall be determined with reference to the targets”

Establishes the Greenhouse Gas Reduction Account (GGRA)

- Cap and trade revenue segregated in this account
- The Act restricts how GGRA funds are spent to:
 - Projects that support GHG emissions reductions
 - Administrative costs of the cap and trade system
- Ensures accountability and requires annual reporting

Setting the Cap

-Ontario's proposed approach is to set the 2017 cap based on the best estimate of emissions in 2017, which would then decline at a rate of 3.7% per year to help the province achieve its 2020 reduction target

-142,332,000 T CO₂e <https://www.osler.com/en/resources/regulations/2016/ontario-reveals-proposed-legislation-and-regulation>

-be at a rate to help province achieve its 2020 reduction target and then ultimately to support Ontario's 2030 and 2050 targets

-Alternatively, Ontario is also considering setting the initial 2017 cap slightly below emissions forecast, which would lead to an immediate step down in emissions.

-OR Set more aggressive 2020 cap relate to 2020 reduction target to further support 2030 and 2050 targets

Ontario's targets are:

- 15% below 1990 levels by 2020;
- 37% below 1990 levels by 2030; and
- 80% below 1990 levels by 2050.

OFFSETS

May be used for up to 8% of compliance obligation

Likely Canada-made offsets or offset credits issued by Québec and California

Sample projects:

- **Urban Forest Project, Afforestation, Emission Reductions from Livestock, Organic Waste Digestion, Organize Waste Management, N2O Reductions from Fertilizer Management in Agriculture**

-Ontario intends to allow the use of offsets for compliance in its program

-It is proposed that Ontario establish an Offset Credit Registry, issue offset credits for emissions reductions and removals from eligible projects within Canada,

-offsets will be "Canada-made" (i.e. from projects based in Canada)

-eligible projects will generally be from sectors not covered by cap to motivate reductions in

those sectors as well

-recognize offset credits issued by Québec and California

-limit use of offsets to up to 8% of the total compliance obligation.

Three offset protocols being prioritized as they are already being used in Quebec and/or California:

1 Mine methane capture and destruction protocol

2 Landfill gas capture and destruction protocol

3 Ozone depleting substances capture and destruction protocol

Source: https://media.assets.eco.on.ca/web/2016/11/2016-Annual-GHG-Report_Chapter-4.pdf

Image Source: MSDEFCC, *The Québec Cap and Trade System for Greenhouse Gas Emissions Allowances, in brief*,

<http://www.mddelcc.gouv.qc.ca/changements/carbone/documents-spede/in-brief.pdf>

Securities Disclosure & Investor Trends

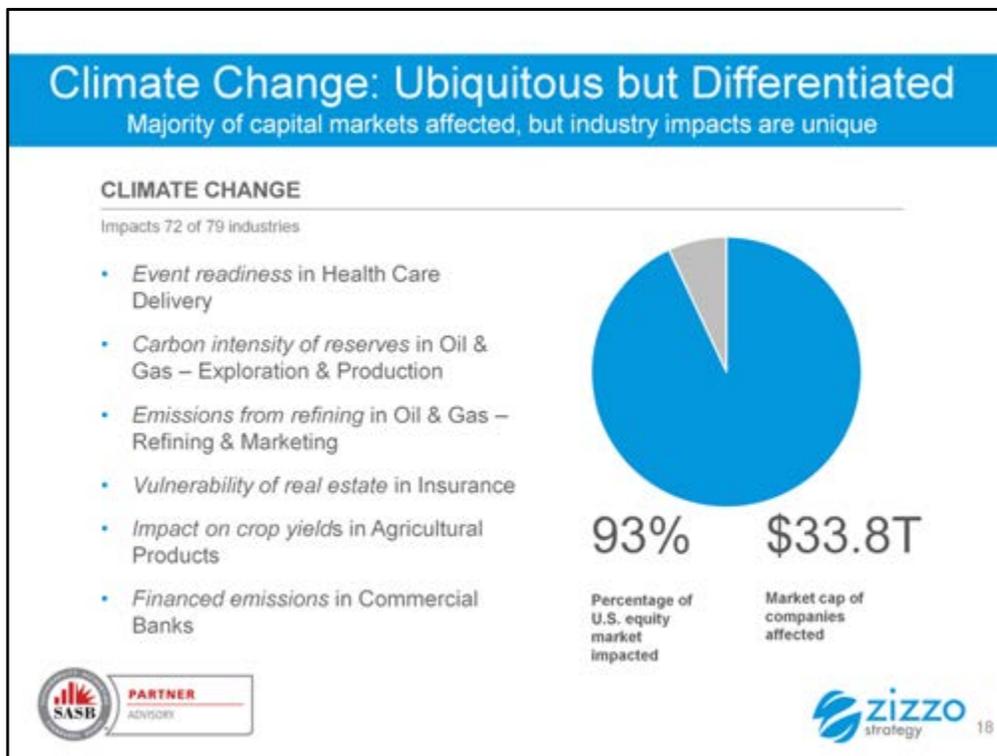


Mark Carney - Governor of the Bank of England, Chair of the Financial Stability Board



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Investment community and capital markets **MUST** lead the way to a low-carbon, climate resilient economy and FSB has begun to advocate for better management of climate risk, starting with disclosure....



Climate Change: In the sectors for which we've issued standards, SASB's research has found that issues related to climate change are likely to be material in 50 out of 57 industries. Indeed, 20 percent of all the standards SASB has issued to date relate directly or indirectly to climate change. But it's important to note that climate change manifests differently in every industry.

- For companies in the health care delivery industry, for instance, one of the more important issues related to climate change is event readiness. Extreme weather events can significantly impact the core assets and operations of these firms. [According to Kaiser Health News](#), Hurricane Sandy cost NYU Langone Medical Center in New York City \$1.2 billion in damages and lost revenue. Meanwhile, [a 2011 study](#) estimated that the health care costs associated with six climate-related events between 2000 and 2009 were \$740 million, reflecting more than 760,000 encounters with the health care system.
- However, in the financials sector, climate change becomes a very different beast. Although the competitive landscape in the commercial banking industry is not directly impacted by environmental concerns in any significant way, banks must respond to mounting investor and regulatory pressure to monitor and manage their financed emissions. Nevertheless, [a recent study](#) found that in the six-year period following the Kyoto Protocol, the top 10 banks nearly doubled their financial support of the coal industry, financing more than \$150 billion worth of coal operations. When a bank invests in or provides lending to firms that produce significant greenhouse gas emissions, the bank indirectly exposes itself to climate-related risks that could diminish returns and reduce value for shareholders. For example, in order to avoid a rise in global average temperature of more than 2° C above pre-industrial levels, it is estimated that 60-80 percent of the coal, oil, and gas reserves of listed firms are unburnable. [Analysts suggest](#) that equity valuations could be reduced by 40-60 percent, resulting in higher costs of capital, ratings downgrades to existing bonds, and difficulties repaying or refinancing existing debt.

As climate change impacts industries in unique ways, simply reporting GHG emissions across the board doesn't tell us anything about event readiness or disease migration in health care. It doesn't tell us anything about the potential for stranded assets in fossil fuel-based industries. It doesn't even tell us much about the energy intensity of data centers in

technology and communications.

SASB's industry-specific approach provides key insights on the ultimate source of GHG emissions and focuses on pressure points and signals for market-based approaches to mitigation and innovation.

Material Climate Change Risks Emerging

- Investors seeking climate-related information
- Need to identify operational impacts
- Unclear / inconsistent metrics

- No general consensus/agreement on what metrics are most important – but increasingly clear there is a connection between overall management quality and success in sustainability (REIT news <https://www.reit.com/news/reit-magazine/july-august-2016/reit-reporting-standards-sustainability-lack-consensus>)
- Nowadays, there's about a dozen or so real estate sustainability standards competing for the attention of investors, according to RealFoundations, a real estate consulting firm. There are BOMA 360 by the Building Owners and Managers Association International, Global Real Estate Sustainability Benchmark (GRESB), Sustainability Accounting Standards Board (SASB) and AccountAbility's AA1000 series. There are the Global Reporting Initiative (GRI) and CDP, formerly known as the Carbon Disclosure Project. Meanwhile, there are building certification programs such as LEED, BREEAM and Green Star. There are also 30 or so ranking and index systems, such as Forbes, MSCI, Asset4, Climate Counts and CSRHub.

Climate Disclosure Developments

- Industry-led Task Force on Climate-related Financial Disclosures (TCFD)
- SASB published sector specific guidance for climate-related risks exposure - *Technical Bulletin – Climate Risk*, October 2016
- BlackRock Chairman & CEO's 2016 Corporate Governance Letter to CEOs
- International Movement



Need for consistency and accuracy across required and voluntary disclosures



Additionally, Bank of England Governor Mark Carney recently appointed former New York City Mayor Michael Bloomberg to lead an influential industry-led [Task Force on Climate-related Financial Disclosures \(TCFD\)](#). [The TCFD is comprised of global leaders from corporations such as Swiss Re, JPMorgan Chase, KPMG, HSBC, Unilever, AXA, and the Industrial and Commercial Bank of China. Over the next 10 months, the TCFD will develop voluntary, consistent climate-related financial disclosure guidelines for use by companies when providing information to lenders, insurers, investors and other stakeholders](#)

SASB, an independent American non-profit chaired by Michael Bloomberg, develops and disseminates sustainability accounting standards that help public corporations disclose material, decision-useful information to investors. Investors representing more than \$23 trillion in assets under management and corporations worth \$11 trillion in market capitalization have participated in SASB working groups to create provisional standards for 79 industries. The last provisional standards will be made publicly available on March 30, 2016.

The international investment community is also increasingly focused on climate risk. The world's largest asset manager, BlackRock, is in the middle of a multi-year effort to integrate environmental, social and governance (ESG) factors (which include climate risk) into its decision-making processes and expects companies to have clear

ESG management strategies.

Task Force on Climate Disclosure

Reporting Principles from Phase 1 Report:

1. Present relevant information
2. Be specific and complete
3. Be clear, balanced and understandable
4. Be consistent over time
5. Be comparable among companies within a sector, industry or portfolio
6. Be reliable, verifiable and objective
7. Be provided on a timely basis

DATE of report April 1 – setting up consultation, and next report expected soon and will focus on delivering specific recommendations and guidelines for voluntary disclosure by identifying leading practices to improve accessibility, clarity, and usefulness of climate-related financial reporting”

Task Force on Climate Disclosure

- FSB's Task Force on Climate-related Financial Disclosures (TFCD) released Phase 2 report December 14, 2016
- Recommendations and guidance re four core areas of organizational operations:
 1. Governance
 2. Strategy
 3. Risk Management
 4. Metrics and Targets
- Provides supplemental guidance for financial and select non-financial sectors
- Recommends disclosure around potential future climate scenarios



Released Dec 14, 2016

TCFD Recommendations:

- Climate-related risks material for many companies
- Should identify climate risks and opportunities and disclose where material risk or opportunities exist in mainstream/public financial filings
 - Decision-useful, forward-looking information on financial impacts
 - Both transition to low-carbon economy AND impacts of changing climate
- Disclosure process for identification/assessment and management of risks
- Consider scenario analysis
 - *What are the implications on organizations from potential future scenarios due to energy transition and changing climate – 2°C scenario, NDC, No Mitigation etc.*
- Use Metrics and Targets (provides sector specific examples)
- Securities regulators and stock exchanges should provide more regulatory guidance and enforcement

Next steps:

- Consultation closed Feb 12, 2017
- Final report with recommendations June 2017



Draft recommendations included:

- Believes **climate-related financial risks are material** for many companies
- Recommends for climate-related risks and opportunities to be **disclosed in mainstream/public financial filings** providing
 - decision-useful, forward-looking information on financial impacts
 - a link to transition to low-carbon economy
- Provides **framework, disclosure recommendations** and **guidance for implementation** including supplements on sector specific considerations
 - *how do organizations consider climate-related impacts in the context of their governance, strategy, risk management and metrics and targets?*
- Recommends using **scenario analysis** to analyze potential impacts on organization's businesses, strategies, and financial planning
 - *What are the implications on organizations from potential future scenarios due to energy transition and changing climate – 2°C scenario, NDC, No Mitigation etc.*

Source: TCFD. (2016). Recommendations of the Task Force on Climate-related Financial Disclosures.

TCFD's Next steps:

- Following the public consultation that ended in Feb 2017, TCFD will publish the final report with its recommendations on climate-related financial risks in Jun 2017.
- TCFD to continue its work on promotion, adoption and evaluation of its recommendations until at least September 2018

Source: <http://www.fsb.org/2017/02/fsb-assesses-implementation-progress-and-effects-of-reforms/>

Institutional Investor Concerns

- Asset Owners Disclosure Project
 - Canada investment funds collectively ranked 11th
 - No “leaders” in Canada – but 3 of 4 “learners” were pensions
- *“Climate change risk is now a mainstream issue for institutional investors...and it is shocking that nearly half the world’s biggest investors are doing nothing at all to mitigate climate risk”*
 - Julian Poulter, CEO of the Asset Owners Disclosure Project, in releasing the 2016 analysis



Of the four learner funds, three were pensions: Ontario Teachers’ Pension Plan, OPSEU Pension Trust and the Canadian Pension Plan Investment Board. While OPSEU Pension Trusts’ rank moved up 18 places from the 2015 list, Ontario Teachers’ slipped 30 places to 64th while the CPPIB fell to 74th from 37th last year.

Asked to comment this morning, Michel Leduc, head of public affairs at the CPPIB, referred to comments on the report in the Globe and Mail. “This report doesn’t come close to representing all that CPPIB is doing to manage this risk,” he said.

“We share the view that climate change is a category of investment risk and we also believe that it’s a challenge for all significant institutional investors.”

Fiduciary Duty and climate change



"Failure to consider long-term investment value drivers, which include [ESG] issues, in investment practice is a failure of fiduciary duty"

Obligations to:

- Shareholders
- Beneficiaries
- Asset owners

Directors as "Good Corporate Citizen" with financial implications



A joint project by the UN PRI, UNEP Finance Initiative, UN Global Compact – law firms provided legal research assistance (including McCarthy's here in Canada) attempting to put to clarify that ESG considerations are not prevented by fiduciary duty, but in fact may be required by it. This is a follow-up to the famous "Freshfields" report of 2005 commissioned by the UNEP FI.

Duty of Loyalty

Duty of Prudence

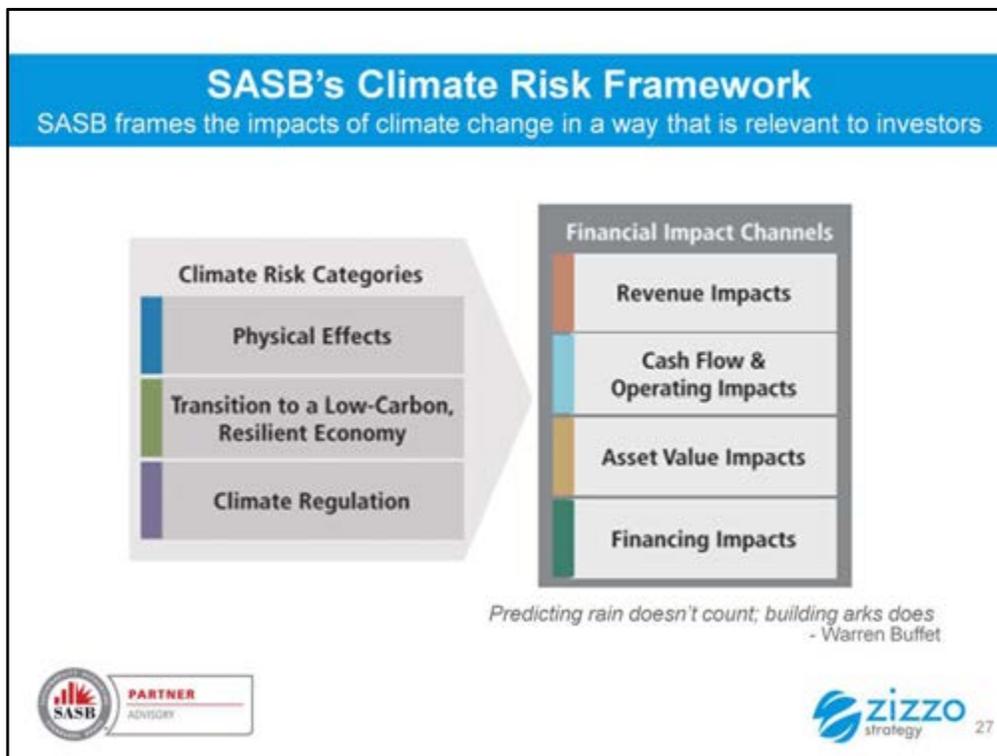
Evolving from focus on short-term profit

Sustainable investment strategies

Roadmap for Canada



- Regulatory Action
 - All Canadian pension plans should be required to disclose ESG impacts
- Stewardship
 - Asset owners should engage with their investee companies on ESG issues
- Corporate Reporting
 - CSA should review and develop reporting framework and guidance for material ESG factors
 - TSX should consider introducing mandatory ESG disclosure as a listing requirement
- Investor Education
 - Boards should incorporate ESG considerations in training materials for new and existing trustees



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SASB's Climate Risk Framework

SASB frames the impacts of climate change in a way that is relevant to investors

SASB's climate-relevant topics and risks for *Real Estate Owners, Developers and Investment Trusts*:

- **Energy Management**
 - *Energy consumption by portfolio, change in energy consumption, energy rating, how building energy management considerations are integrated into property investment analysis and operational strategy*
- **Water Management**
 - *Total water withdraw by portfolio, change in water withdrawn, water management risks, strategies and practices*
- **Climate Change Adaptation**
 - *Assets located in flood hazard areas, climate change exposure analysis, degree of systemic portfolio exposure, and strategies for mitigating risks*
- **Management of Tenant Sustainability Impacts**





Energy Management:

- companies in the industry that effectively manage **the energy performance of their assets may see reduced operating costs and regulatory risks**, as well as **increased tenant demand, rental rates, and occupancy rates**, all of which drive revenue and asset value appreciation.
- Improving the energy performance of assets is highly dependent on property type and location, target tenant market, local building codes, physical and legal opportunities to deploy distributed renewable energy, ability to measure consumption, and performance of existing building stock, among other factors.

Water Management

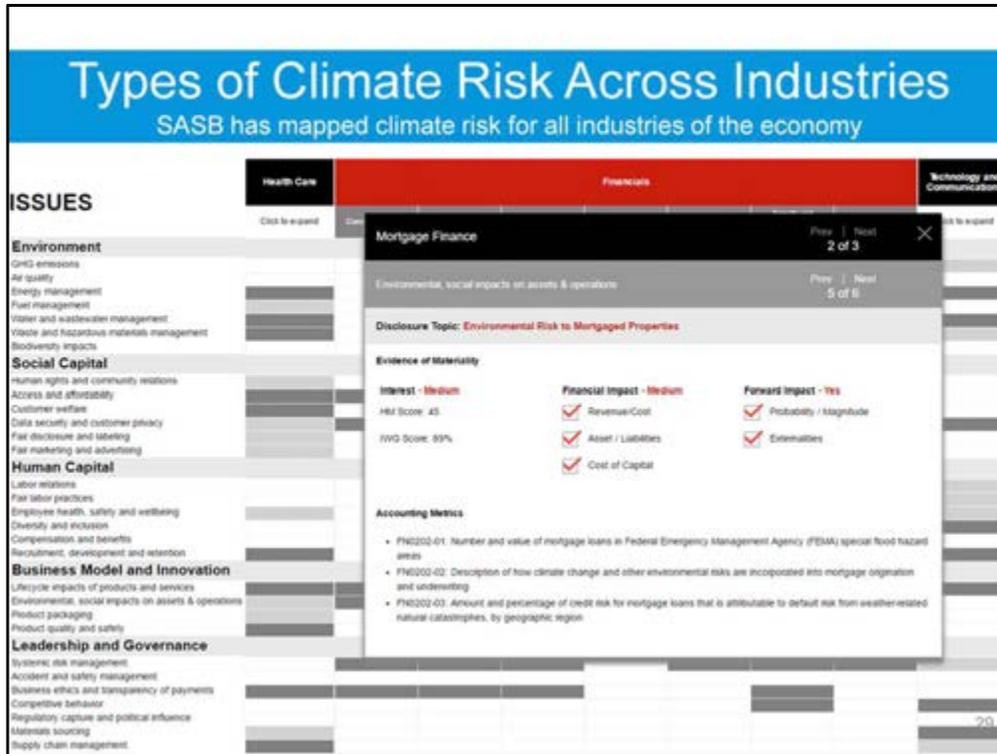
- Buildings consume significant amounts of water in their operations, through water fixtures, building equipment, appliances, and irrigation.
- Operating costs resulting from water consumption may represent significant costs depending on property type, tenant operations, geographical locations, and other factors
- Long-term historic increases in the costs of water, and expectations around continued increases due to overconsumption and constrained supplies resulting from population growth and shifts, pollution, and climate change, indicate the heightened importance of water management.

Climate Adaptation:

- investment strategies with assets located on floodplains and in coastal regions that are exposed to inclement weather may have increased needs around risk mitigation and business model adaptation to climate change over the long term.
- To ensure long-term growth and protection in shareholder value, companies need to implement climate change adaptation strategies that are comprehensive, account for trade-offs between various risk mitigation strategies, and integrate consideration of all projected costs and benefits over the long term.

Source: REAL ESTATE OWNERS, DEVELOPERS & INVESTMENT TRUSTS, Sustainability Accounting Standard

http://www.sasb.org/wp-content/uploads/2016/03/IF0402_REOD_IT_Standard.pdf

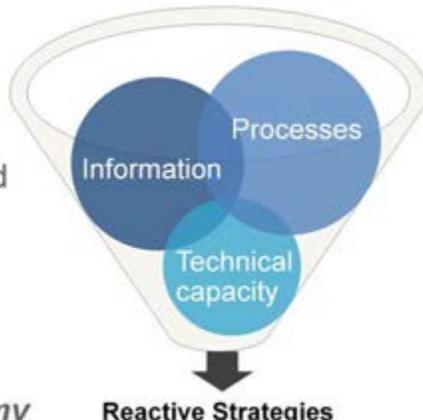


- In **real estate**, an investor might want to understand the geographic location of vulnerable assets, or the average *energy efficiency* (kw-hr/sf) of the buildings in a REIT.
- In **airlines**, the age of the fleet and the *fuel efficiency* (gallons per passenger mile) matter, as well as the *fuel hedging* practices of the airlines, which can mask a need for conservation or fuel switching.
- For **oil and gas companies**, the volume of carbon based reserves currently booked as an asset is a critical metric that will affect long-term valuation.
- For an electric **utility**, the *% renewables* in the portfolio and the *GHG emissions* from power production are useful for determining potential carbon liability and positioning, as are the policies supporting *distributed generation* (net metering) and the ability to accept *intermittent loads* of renewables into the grid.
- In **automobiles**, the *fuel efficiency* of the fleet in mpg (CAFÉ standards) and the alternative fuel vehicles under development are key metrics.
- In **banking and insurance**, the *vulnerability of the insured assets* to weather related events and/or the *carbon intensity* of those assets matters to investors.

Emerging Trends

- Business as usual is changing
- Integrate climate risk into planning, operations and management
- Consistency in approaches and communications

Understanding obligations, duties and expectations for strategies in a low-carbon, climate resilient, global economy



Reactive Strategies



So where are we now?

-The truth is that, even without a comprehensive federal or provincial set of rules, climate matters. That's certainly the case with adaptation. Although legislative delay – PRIVATE AND TORT LAW is STILL WORKING!

-What this means is that, even though the feds might not be telling us, we need to change policies and procedures.

-This includes long term planning, infrastructure.

-Why? Both to be a prudent manager of facilities and to reduce the risk of litigation.

-Moreover, some fast movers have been able to obtain significant monetary benefits from a) reducing energy intensity and b) creating carbon credits.

-That's exciting for everyone, particularly in a resource-constrained environment.

Risk Management Strategies

- Decision-makers must keep pace with projected climate impacts and associated changes in expectations
- Consider current levels of climate change preparedness
- Use tools like SASB to challenge risk-identification and management
- Identify your top 3-5 top climate risks and start developing strategies to address them

Comments and Discussion

Thank You



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