



2019 **ANNUAL  
MEETING**  
& EXHIBIT

October 27-30  
Toronto, Canada

## Session 195: Climate Change: Why it Matters to Actuaries and How You Can Make a Difference

[SOA Antitrust Compliance Guidelines](#)

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# Climate Change: Why it matters to Actuaries and How You Can Make a Difference

Gaetano Geretto, Sam Gutterman, Karen Lockridge

Session 195

October 30, 2019



# SOCIETY OF ACTUARIES

## Antitrust Compliance Guidelines

Active participation in the Society of Actuaries is an important aspect of membership. While the positive contributions of professional societies and associations are well-recognized and encouraged, association activities are vulnerable to close antitrust scrutiny. By their very nature, associations bring together industry competitors and other market participants.

The United States antitrust laws aim to protect consumers by preserving the free economy and prohibiting anti-competitive business practices; they promote competition. There are both state and federal antitrust laws, although state antitrust laws closely follow federal law. The Sherman Act, is the primary U.S. antitrust law pertaining to association activities. The Sherman Act prohibits every contract, combination or conspiracy that places an unreasonable restraint on trade. There are, however, some activities that are illegal under all circumstances, such as price fixing, market allocation and collusive bidding.

There is no safe harbor under the antitrust law for professional association activities. Therefore, association meeting participants should refrain from discussing any activity that could potentially be construed as having an anti-competitive effect. Discussions relating to product or service pricing, market allocations, membership restrictions, product standardization or other conditions on trade could arguably be perceived as a restraint on trade and may expose the SOA and its members to antitrust enforcement procedures.

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- **Do not** discuss prices for services or products or anything else that might affect prices
- **Do not** discuss what you or other entities plan to do in a particular geographic or product markets or with particular customers.
- **Do not** speak on behalf of the SOA or any of its committees unless specifically authorized to do so.
- **Do** leave a meeting where any anticompetitive pricing or market allocation discussion occurs.
- **Do** alert SOA staff and/or legal counsel to any concerning discussions
- **Do** consult with legal counsel before raising any matter or making a statement that may involve competitively sensitive information.

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# Presentation Disclaimer

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# Climate Change: Why it matters to Actuaries and How You Can Make a Difference

## What's Happening and Who's Involved

**Sam Gutterman**

Session 195

October 30, 2019



# What's happening and Who's involved my agenda today

- What's involved
- Who are the stakeholders
- What are actuarial organizations doing
- Actuarial issues

# What's involved

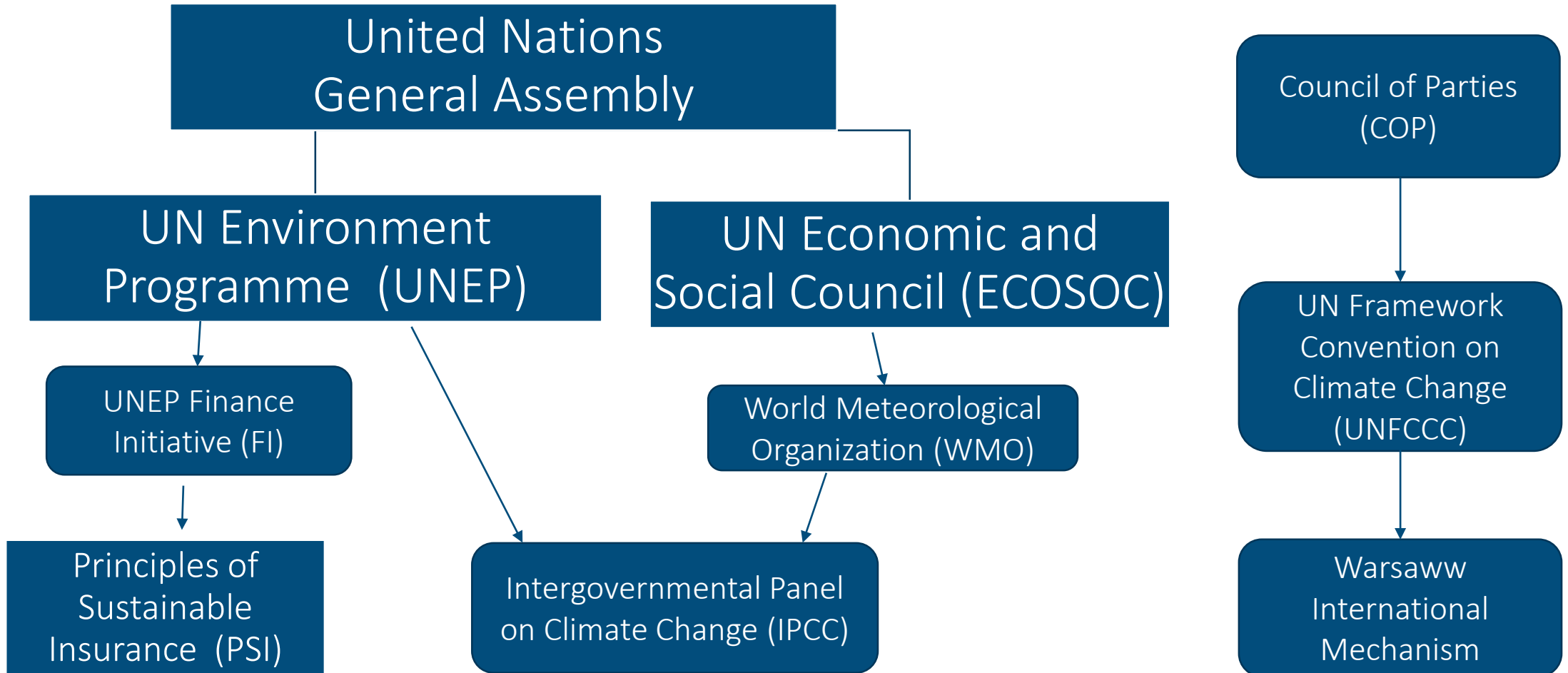
- Climate change, especially its resulting losses and damages
  - Temperature, rainfall patterns, storm severity, sea level rise and acidification
  - Regional variations with some benefits
- Physical and health losses and damages
- Decarbonization transition
- Adaptation efforts
- Risks and uncertainties galore

# Who are the stakeholders

- Society – current and future generations
- Financial institutions and programs
  - Internal risk management processes and their stakeholders
  - Investors / participants
- Private and public sectors
  - Decision-makers – governments, businesses and individuals
- Regulators and public sector organizations
- Advocates and detractors
  - Environmental groups
  - Certain vested interests



# The United Nations



# Regulators involved

- Insurance
  - International Association of Insurance Supervisors (IAIS)
    - Together with the Sustainable Insurance Forum (SIF)
  - NAIC (United States)
    - California Insurance Department
- Pensions
  - International Organization of Pension Supervisors
- Corporate disclosures
  - Task Force on Climate-related Financial Disclosure (TCFD) of the Financial Stability Board

# Standard setters

- Sustainability Accounting Standards Board (SASB)
- Global Reporting Initiative (GRI)
  - Reporting (sustainability or Environment, Social and Governance (ESG)) standards developed by the Global Sustainability Standards Board
  - Collaborating with the UNEP and the UN Global Compact
- International Integrated Reporting Council

# What are actuarial associations doing

- Society of Actuaries
  - Climate and Environmental Sustainability Research Committee
    - Wide range of research projects
  - Support of NAAC activities
  - Catastrophe and Climate Strategic Research Program – beginning in late 2020
- North American Actuaries Council
  - Actuaries Climate Index and research into Actuaries Climate Risk Index (Canada, US)
- Casualty Actuarial Society
  - Support of NAAC activities, presentations and recent research activities
- Canadian Institute of Actuaries
  - Support of NAAC activities, presentations and recent public statement
- Institute and Faculty of Actuaries
  - Resource and Environment Board, conducting events and research
- Institute of Actuaries of Australia
  - Actuaries Climate Index and research into Actuaries Climate Risk Index (Australia)

# What are actuarial associations doing

## The International Actuarial Association

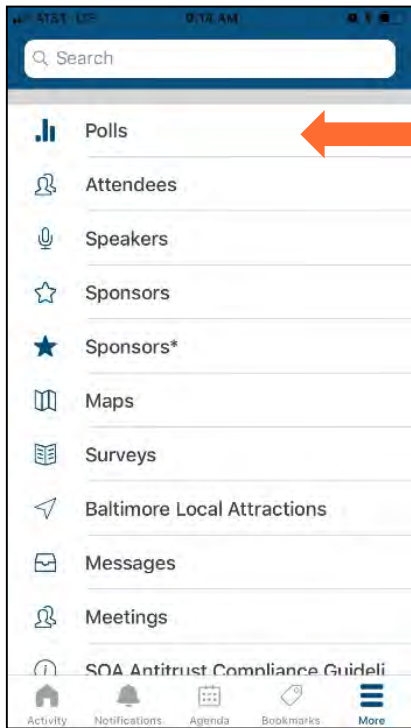
- Resource and Environment Working Group
  - Discussion Papers and Briefing Papers – topics have included: Climate Change and Mortality, Decarbonization, Flood Risk, Climate Change/Vulnerable Populations/Insurance
  - In the next six months: Climate Change and Adaptation, Water Risks, Environmental Risks for Pension Programs
- Management of relations with several supranational organizations dealing with environment issues
- Proposing an IAA strategic emphasis on climate risks

# Actuarial issues

- Often categorized as
  - Physical, Transition and Liability risks
- Impact on current users of actuarial services, especially insurers, pension plans
  - Internal risk management, financial disclosures
- Relevant data
  - Expected values and uncertainty
- Modeling, especially loss and damage estimates
  - Scenarios and uncertainty
- Financing mitigation and adaptation
- Public policy

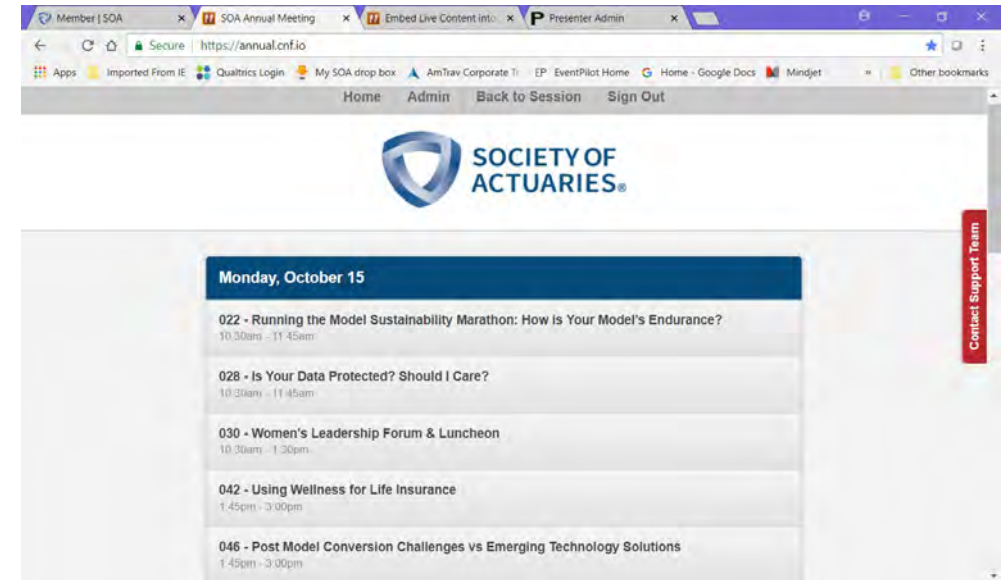
# To Participate, look for Polls in the SOA Event App or visit [annual.cnf.io](https://annual.cnf.io) in your browser

Find The Polls Feature Under **More**  
In The Event App or Under This  
Session in the Agenda



or

Type [annual.cnf.io](https://annual.cnf.io) In Your Browser



# Polling Question:

How important are climate change risks to your employer (e.g., insurer, pension plans)?

1 – very important

2 – important

3 – not a big priority

4 – unimportant

5 – completely unimportant



## *Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll: How important are climate change risks to your employer (e.g., insurer, pension plans)?**

# Polling Question:

How important are climate change risks to you as an actuary?

1 – very important

2 – important

3 – not a big priority

4 – unimportant

5 – completely unimportant

## *Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll:**  
**How important are climate change risks to you as an actuary?**

# Polling Question:

How important are climate change risks to you personally?

1 – very important

2 – important

3 – not a big priority

4 – unimportant

5 – completely unimportant

## *Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll:**  
**How important are climate change risks to you personally?**

# Polling Question:

What is the most important area actuaries should get involved with -- physical, transition or liability risks?

1- physical risks

2 - transition risks

3 – liability risks

## *Live Content Slide*

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**Poll: What is the most important area actuaries should get involved with -- physical, transition or liability risks?**

Sam Gutterman, FSA, FCAS, MAAA,  
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# Climate Change: Why it matters to Actuaries and How You Can Make a Difference

## What's Happening in Sustainable Finance

**Karen Lockridge**

Session 195

October 30, 2019



# Polling Question:

In terms of the transition to a low carbon economy, which of the following scenarios do you think to be most likely:

- a) An orderly transition, starting now
- b) A technology-driven transition with limited need for policy changes
- c) A delayed, forceful and disruptive transition
- d) Failure to transition that leads to climate breakdown
- e) Other

## *Live Content Slide*

*When playing as a slideshow, this slide will display live content*

**Poll: In terms of the transition to a low carbon economy, which of the following scenarios do you think to be most likely:**

# What's Happening on Sustainable Finance Globally and In Canada

- FSB TCFD
- Investor Actions
- Global and Industry Developments
- Canadian Developments

# FSB's Task force on Climate-related Financial Disclosures (TCFD)

Asset owners should consider the following questions:

- **Governance:** Who has oversight of climate-related risks and disclosures (board / management)? Is this documented?
- **Strategy:** Have you considered climate related risks and opportunities for inv. strategy? Different climate scenarios?
- **Risk Management:** Have you established risk assessment and reduction processes, including engagement with managers and low-carbon allocations?
- **Metrics & Targets:** Have you assessed your portfolio carbon emissions (e.g. carbon footprinting) and considered targets for improvements?



Source: <https://www.fsb-tcfid.org/>

SOURCE: TCFD

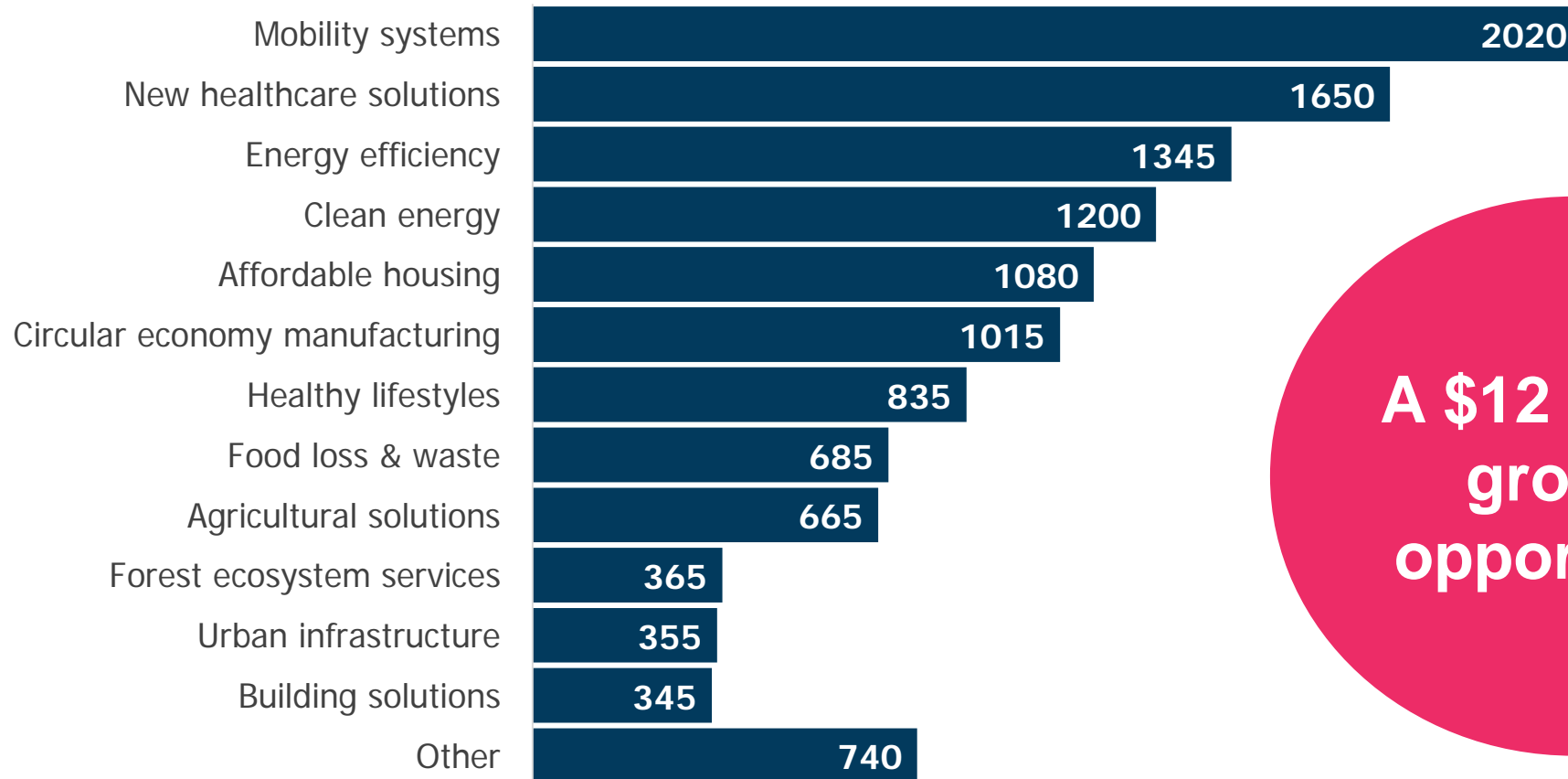
# Investor Action and Research

- **Climate Action 100+** is an investor initiative, representing over \$34 trillion of AUM, engaging the world's largest corporate GHG emitters to:
  - Curb emissions
  - Improve governance, and
  - Strengthen climate-related disclosures
- **Transition Pathway Initiative, Carbon Tracker Initiative, Influence Map** and others provide company level research to support collaborative engagement efforts
- **Just transition** for affected workers



# It's Not Just Investment Risks

## Value of incremental opportunities in SDGs in 2030



**A \$12 trillion  
growth  
opportunity**

Source: Better Business Better World; The report of the Business & Sustainable Development Commission; 2017 / SDG = Sustainable Development Goals (\$USD billion; 2015 values)

# Global Developments on Sustainable Finance

## EUROPE

- **EU IORP II 2016**  
(Institutions for Occupational Retirement Provision II) 2016 requires member states to address ESG risks (by 01/19)
- **UK DWP Investment Regulations**—SIPPs must address ESG and climate change by Oct 2019
- **EU Action Plan for Sustainable Finance 2018**
  - Sustainability Taxonomy (1 of 10 action items)
- **UK Financial Regulators** issue Joint Statement on climate change (07/19)

## THE AMERICAS

- **Canadian Expert Panel on Sustainable Finance**
  - Recommendations in June 2019
  - Taxonomy suitable for a country with 'big energy sector' (underway)
- **President Trump's Executive Directive** on ESG, energy investments and proxy voting (04/19)
- **Brazil introduced ESG requirements** for pension funds (2018)
- **California Insurance Commissioner** launches 'Sustainable Insurance Roadmap 2020' (07/19)

## ASIA/PACIFIC

- **China on environmental disclosures**
  - Securities Regulatory Commissions mandates disclosures by 2020
  - HK issues Green Finance Strategic Framework (2018)
- **Japan's Stewardship Code** accepted by 246 inst'l investors, as per the Financial Services Agency
- **Australian Securities and Investments Commission (ASIC)** updates guidance on climate change disclosure
  - Incorporate types of risks developed by TCFD
  - Highlight climate change as systemic risk

## GLOBAL

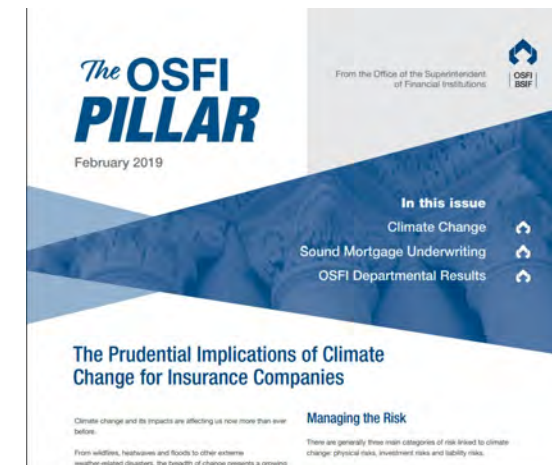
- **TCFD Recommendations** issued in 2017
- **The International Organization of Securities Commissions (IOSCO)** issues statement on ESG disclosure (Jan 2019)
- **Network for Greening the Financial System (NGSF)**: Central bankers issue report, call to action on climate change (04/19)
- **International Organization of Pension Supervisors (IOPS)** issues consultation ESG factors (Feb 2019)
- **OECD initiates project** to map sustainability taxonomies (2020)





# Meanwhile in Canada . . .

- Government of Canada's **Expert Panel on Sustainable Finance** issues final report with recommendations
- **OSFI** joins the international Sustainable Insurance Forum and issues OSFI Pillar on 'The Prudential Implications of Climate Change for Insurance Companies'



# Meanwhile in Canada . . .

- **Canadian Securities Administrators (CSA)** issues guidance on Reporting of Climate Change-related Risks (Staff Notice 51-358)
- **Bank of Canada** identifies climate change as a vulnerability in the Canadian financial system, and joins the Central Banks' and Supervisors' Network for Greening the Financial System
- **Toronto Stock Exchange** joins United Nations Sustainable Stock Exchanges initiative

Sources:

[https://www.osc.gov.on.ca/en/SecuritiesLaw\\_csa\\_20190801\\_51-358\\_reporting-of-climate-change-related-risks.htm](https://www.osc.gov.on.ca/en/SecuritiesLaw_csa_20190801_51-358_reporting-of-climate-change-related-risks.htm)

<https://www.bankofcanada.ca/2019/05/financial-system-review-2019>

<https://sseinitiative.org/home-slider/toronto-stock-exchange-joins-united-nations-sustainable-stock-exchanges>



August 1, 2019

Executive summary

The focus on climate change-related issues in Canada and internationally has grown rapidly in recent years. In order to make informed investment and voting decisions, investors, particularly institutional investors, are seeking improved disclosure on the material risks, opportunities, financial impacts and governance processes related to climate change.



Karen Lockridge, FSA, FCIA  
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# Climate Change: why it matters to actuaries and how you can make a difference

2019 ANNUAL  
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**Gaetano Geretto**

Session 195 - October 30, 2019



# Climate Change: why it matters to actuaries and how you can make a difference

- View of climate change risks in Canada through the eyes of the CIA Climate Change and Sustainability Committee:
  - 2018 Key achievements
  - 2019 Deliverables: to date and expected later this year
  - Public Statement on Climate Change Risks
  - Committee Members
  - Questions

# Climate Change: why it matters to actuaries and how you can make a difference

## CIA Climate Change and Sustainability Committee

- 2018 Key achievements:
  - Presentations at the Appointed Actuaries' seminar and the Pension and Investment seminar (English)
  - Discussion of parameters for 2 C stress testing
  - Development of outline for Level 2 Public Statement
  - Creation of 2019 strategic objectives
  - Executing succession for committee membership

# Climate Change: why it matters to actuaries and how you can make a difference

CIA Climate Change and Sustainability Committee

- 2019 completed deliverables to date:
  - Written feedback to Canadian Federal Government on its Environmental Strategy 2020-2022 initiative (April)
  - Input on climate change risks into proposed CIA education syllabus (April)
  - Recruited new members to fill committee membership gaps (May/August)
  - Discussion of awareness campaign for membership on climate change risks in actuarial practice and discussions with CIA leadership and staff, as well as leaders of Practice Development Council and Standards Governance Council (May)
  - Development and launch of survey on risks from Climate Change (June)
  - Development of Level 2 Public Statement for membership input (June)
  - Continued work on the Actuaries Climate Index (ACI) and planning for the Actuaries Climate Risk Index (ACRI) (ongoing)
  - Continued work on the IAA's Resource and Environmental Working Group (REWG)

# Climate Change: why it matters to actuaries and how you can make a difference

## CIA Climate Change and Sustainability Committee

- 2019 completed deliverables to date:
  - Input to federal government's request for input into the development of the 2020 federal budget (August)
  - Compiled survey results on risks from Climate Change (August)
  - Analysis of survey results and committee discussion (Sept)
  - Reviewed responses from membership consultation on Level 2 Public Statement (August)
  - Documented and compiled membership input on Level 2 Public Statement (August)
  - Provided final draft of Level 2 Public Statement for Public Affairs Council review (August)
  - After Board approval, issued final Level 2 Public Statement (September 24th)



# Climate Change: why it matters to actuaries and how you can make a difference

## CIA Climate Change and Sustainability Committee

- Expected deliverables in last quarter of 2019:
  - Strategic face-to-face meeting (Oct 28<sup>th</sup>)
  - In-depth analysis of survey results on risks from Climate Change by practice areas (target - Nov)
  - Prioritize practice area handbooks on the risks from climate change (target – Nov)
  - Start developing practice area handbooks on the risks from climate change (target – Dec & beyond)
  - Continue to update the CIA CCSC Resources Page on information from actuarial and non-actuarial sources on the risks from climate change (on-going)
  - Develop webcasts and other guidance on the risks of climate change to actuarial work (ongoing)
  - Continuing work on the Actuaries Climate Index (ACI) and planning for the Actuaries Climate Risk Index (ACRI) (ongoing)

# Polling Question:

Are you aware of the Actuaries Climate Index?

1 – Yes

2 - No

## *Live Content Slide*

*When playing as a slideshow, this slide will display live content*

# **Poll: Are you aware of the Actuaries Climate Index (ACI)?**

# Climate Change: why it matters to actuaries



September 2019

## Time to Act:

Facing the Risks of a  
Changing Climate

Canadian  
Institute of  
Actuaries  Institut  
canadien  
des actuaires

# Climate Change: why it matters to actuaries and how you can make a difference

“Time to Act: Facing the Risks of a Changing Climate”

3 main recommendations:

1. The Canadian federal government to **oversee the development of national data collection and disclosure** related to the financial impacts of climate-related events such as floods, windstorms, and wildfires.

# Climate Change: why it matters to actuaries and how you can make a difference

“Time to Act: Facing the Risks of a Changing Climate”

3 main recommendations (continued):

2. All levels of Canadian government to require all Canadian entities to implement **financial disclosure of climate-related risks and opportunities** under the Task Force on Climate-related Financial Disclosures (TCFD) by 2021 and for corporate entities to adopt the TCFD framework voluntarily as soon as possible.

# Climate Change: why it matters to actuaries and how you can make a difference

“Time to Act: Facing the Risks of a Changing Climate”

3 main recommendations (continued):

3. Investors and business leaders in Canada to **include environmental, social, and governance (ESG) factors** in their decision-making.

# Climate Change: why it matters to actuaries and how you can make a difference

“Time to Act: Facing the Risks of a Changing Climate”

“These important steps will help manage the financial impacts associated with the climate risks we face and will help ensure climate-sensitive financial security for all Canadians. “



# Climate Change: why it matters to actuaries and how you can make a difference

- CIA Public Statement on Risks from Climate Change:  
“Time to Act: Facing the Risks of a Changing Climate”
- Reactions to date:
  - Very positive both domestically and internationally;
  - Requests from industry participants to participate in strategic discussions on the development of risks from climate change;
  - More guidance being requested on scenarios for stress testing on the risks from climate change.

# CIA Climate Change and Sustainability Committee – Members - current

Gaetano Geretto, Chair

Catherine Jacques-Brissette, Past Chair

Nicholas Hsu, Secretary

Anne-Marie Beaton

Zahir Bhanji

Christine Bisson-Roberge

Meihsuan Chao

Richard Chevalier

André Choquet

Delphina Chu

Maxime Delisle

Frances Fu

Odile Goyer

Yves Guérard

Harry Li

Muhammad Rizvi

William Shi

Tulio Walles

Yeh-Ching Seto (PDC Liaison)

Chris Fievoli (Staff Fellow)

Sandra Caya (CIA Director of  
Communications and Public Affairs)

# Thank you!

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QUESTIONS?