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Canadian Electricity Sector's Commitment to Addressing Sustainability and Climate Change Adaptation

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Ready, Steady, Adapt: Leading Adaptation through Collaboration
The Business of Climate Resilience and Adaptation
Ontario Climate Consortium
Symposium (May 11, 2015)

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The Canadian Electricity Association (CEA) is the voice of the Canadian electricity industry, promoting electricity as a key social, economic and environmental enabler that is essential to Canada's prosperity.

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Sector's Commitment to Sustainability and Climate Change

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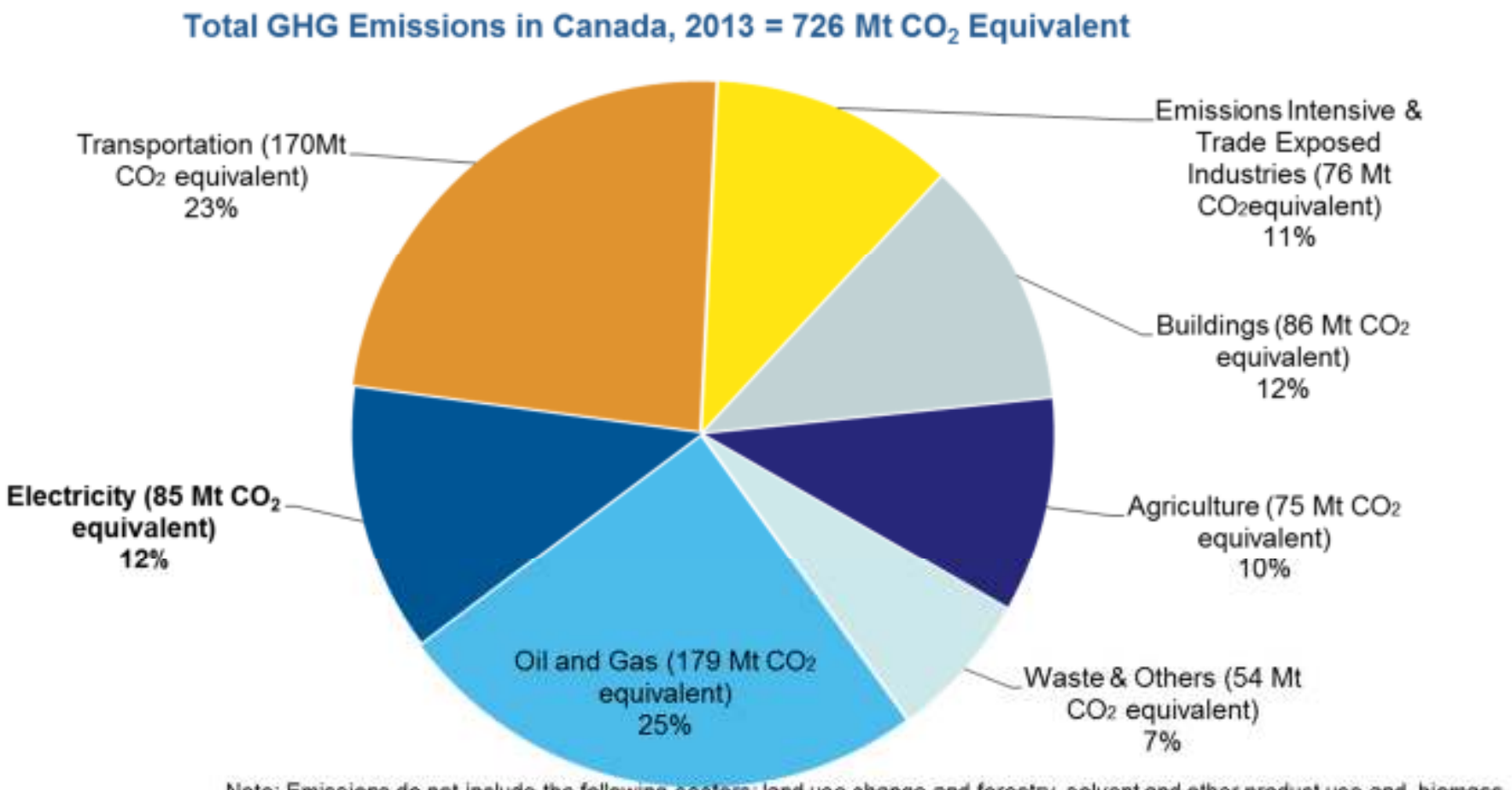
Principle:

- **Climate Change Mitigation and Adaptation:** *Mitigate greenhouse gas emissions from facilities and operations, and adapt to the adverse effects of climate change on electricity infrastructure*

Reducing the Sector's Greenhouse Gas Footprint



Note: Emissions do not include the following sectors: land use change and forestry, solvent and other product use and biomass
Source: Environment Canada, National Inventory Report 1990-2013: Greenhouse Gas Source and Sinks in Canada, Report date: April 2015

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The Business Case for Climate Change Adaptation



Adaptation is an Enterprise Risk Issue!

- The electricity sector is already affected by increased frequency and intensity of severe weather events
- Increased customer outages/interruptions
- Millions spent on restoration efforts

Significant Weather Event: Hurricane Sandy, 2012

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Significant Weather Event: Calgary, 2013

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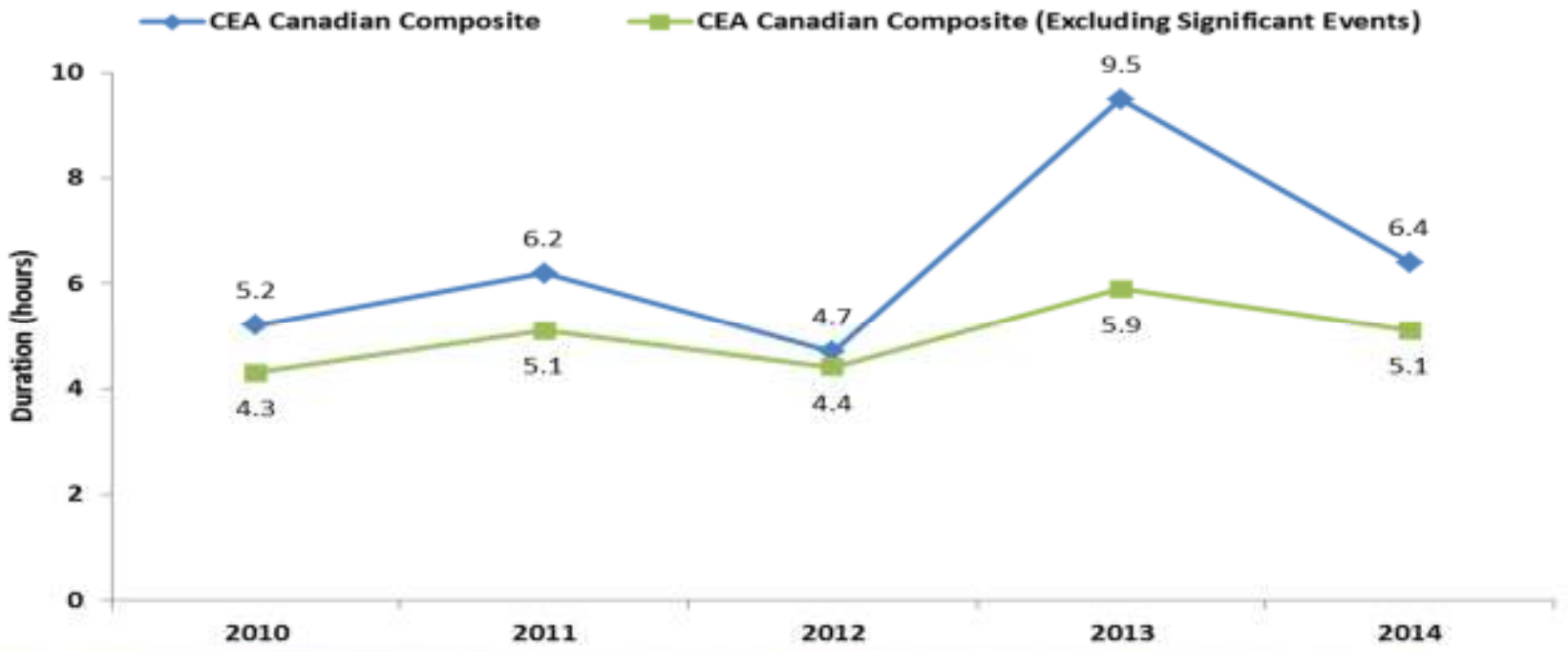
Significant Weather Event: Toronto, 2013

Significant Weather Events and System Reliability

- A combination of aging infrastructure, vegetation management, and severe weather events are already contributing to lower system reliability and resiliency
- Underground distribution lines (where feasible/cost effective), reinforcing aboveground poles with sturdier materials, and better vegetation management practices may reduce damage and improve reliability

System Average Interruption Duration Index (SAIDI)



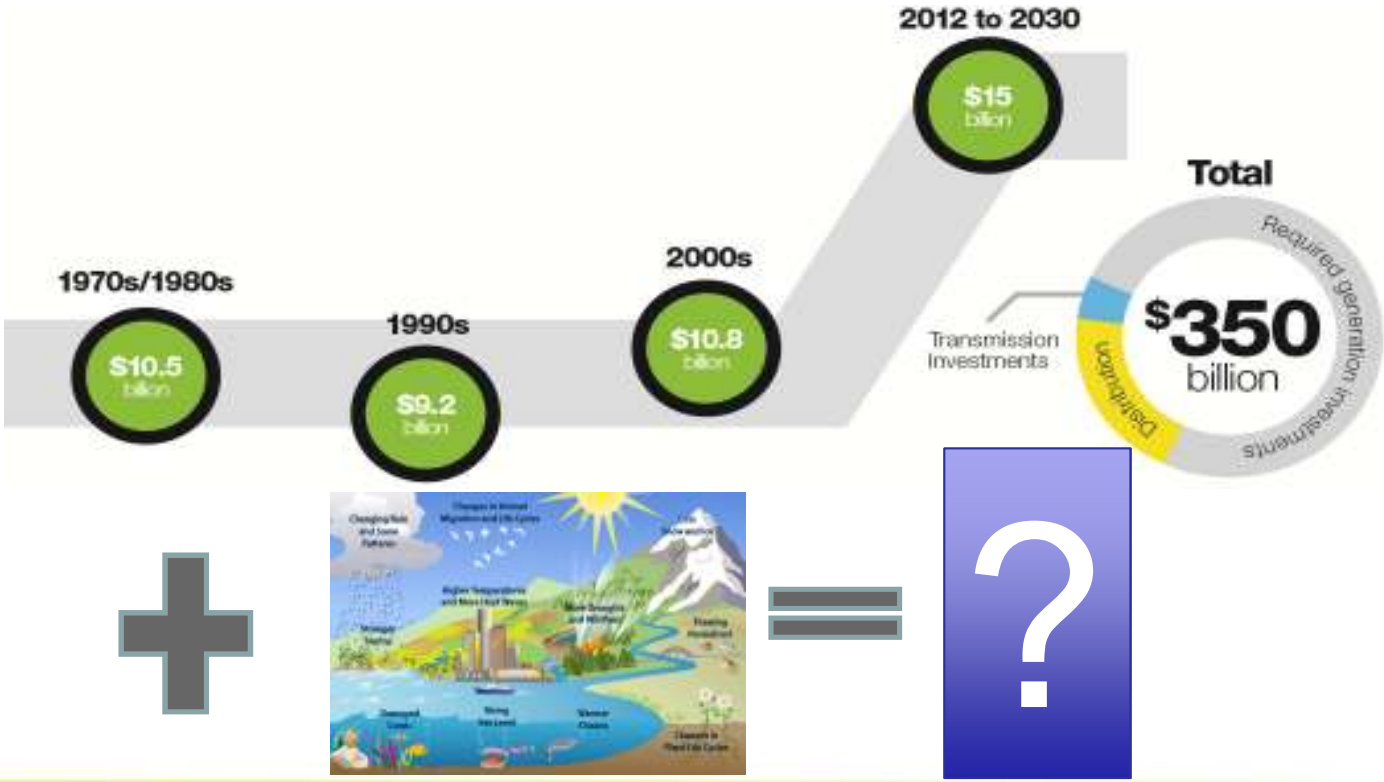
Long-Term Climate Change Risks

- Long-term trends in temperature, precipitation levels, wind patterns, sea-level rise, and permafrost changes will likely have a much bigger impact including:

  - plant safety
  - lower production efficiencies/output
  - shifts in hydrology affecting water supply
  - changes to energy demand
  - slope stability issues
  - increased corrosion rates on transmission hardware

Addressing Adaptation through Investment Panning

- Canada's electricity system is in need of massive infrastructure renewal ($350 billion by 2030) providing an opportunity to consider climate adaptation considerations as part of integrated resource planning by utilities



Current Context for Addressing Adaptation

- Climate adaptation remains an emerging issue for utilities, but there is an enhanced level of awareness and urgency

- Investment planning is still primarily based on customer needs and reliability
  - Many companies have emergency plans in place to respond to severe weather events, but not many have formal policies on adaptation

- Decisions around climate adaptation are primarily driven by:
  - customer demand
  - life/condition of existing assets and investment planning
  - regulatory models

- For utilities to incorporate adaptation more effectively in their investment practices: need to build more confidence in climate data (magnitude of the change regionally/locally), and need a more defined process for connecting adaptation with investment planning

Addressing Adaptation and Resiliency through Collaboration

- Effective climate adaptation in electricity will require greater stakeholder collaboration and private-public partnerships
- There needs to be a national adaptation strategy to improve the national understanding of this issue, cross-border coordination with the U.S., and support for scientific research
- The provinces/territories need to establish policies to encourage greater action on climate adaptation and work with regulators to define appropriate adaptation related investment mechanisms (e.g. through rate setting, dedicated cost-recovery)
- Utilities have a responsibility to integrate climate adaptation as part of their resource planning and develop policies, plans and procedures to address climate adaptation

Questions?

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