



CANADIAN INSTITUTE FOR
CLIMATE CHOICES

Defining pathways to net-zero by 2050

SPI Symposium

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Outline

Who are we?

Project: Defining net-zero pathways to 2050 for Canada

Research gaps and questions

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The background is a dark, layered collage. At the top left is a large, solid yellow circle representing the sun. Below it, a network diagram consists of white circles connected by thin white lines, radiating from a central point. In the center is a vintage, silver microphone with a mesh grille. To the right, a portion of a map is visible, showing a coastline and various numerical labels like '57 MAGNETIC', '59', '62', '63', '60', '52', '56', '45', '35', '43', '41', '34', '42', '39', '31', '34', '53', '47', '40', '150', '47', '56', '52', and '15°W(2017)'. Numerous black silhouettes of birds in flight are scattered across the scene, some appearing to fly towards the microphone. The overall aesthetic is a blend of nature, technology, and navigation.

Who are we?

About the Institute

Collaborative Research. Integrated Climate Policy. Better Choices.

- What are the **challenges and opportunities** along the path to 2050?
- How can we **measure success** along the way—across multiple dimensions?
- What **choices** do we have, and what are their **implications**?

Who We Are

- Independent **Board of Directors**
- 30+ **Expert Panelists** well known in their fields
- **Advisory Group** provides strategic insight
- Professional secretariat focused on **research, engagement, and communications**
- **A network of partners**

Leveraging partnerships



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Project: defining pathways to net-zero by 2050 in Canada

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Objectives

- Provide a touchstone for conversations; “broaden the mitigation tent”
 - Frame pathways beyond decarbonization alone
 - Transitions narratives reflecting different perspectives
 - Use scenario analysis to inform pathways and understand trade-offs
- Highlight key policy challenges and opportunities
 - Identify key decision-points on the road to 2050, across scenarios
 - Identify short-term policies that align (or don't) with the long-term goal

Value-added of this work

- Define “net-zero” (or at least frame a discussion)
- Scenarios define broad, integrated narratives of transition (beyond GHGs and economic costs)
- Unpack key global and domestic drivers of possible pathways, lay out key choices for Canada
- Communications and engagement aims to target broader audience to help shape awareness and influencers’ perceptions

Fundamental approach

- Define key outcomes, or future “states of the world” to test (e.g., natural resource extraction continues, even as Canada achieves net zero)
- Determine a set of internally consistent assumptions and outcomes that describe each scenario
- Develop an overarching qualitative narrative around each scenario

* Use gTech model possibly other modeling tools to inform, shed light, not tell truth

Scenarios

	Canada “transforms”	Canada “transitions”
Rest of world follows	#1	#2
Rest of world lags	#3	#4

- Canada meets net-zero in 2050 in all scenarios
- Substantial changes in Canada’s economy take place in all scenarios: one key difference is the reliance on carbon dioxide removal (land-use management, bioenergy carbon capture and storage, direct air capture)



Research gaps & questions

Research gaps and questions

- What is the role of carbon dioxide removal/negative emissions in meeting net-zero in Canada? (land use, BECCS, DAC)
 - Technical capacity, cost profiles, social acceptability, governance and accounting structures needed to deploy at scale
- Where are the degrees of freedom in defining different pathways to net-zero by 2050? (ie. Are there that many different ways to reach that goal?)
- What communication techniques can best frame different pathways to “broaden the tent” and reduce polarization?
- How can policy and governance frameworks be designed to support continued progress towards net-zero in Canada?
 - Alignment of short-term policy to long-term goals
 - Alignment of financial flows consistent with net-zero
 - Need for R&D, on what, at what stages of innovation, in what form?
 - Addressing governance issues specific to Canada’s federation

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