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# Canada's Mid-Century Long-Term Low-Greenhouse Gas Development Strategy

UNFCCC  
February 1st, 2017

# Outline

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- This presentation aims to provide information around Canada's Mid-Century Strategy:
  - Canadian context
  - Collaboration with International Partners
  - Highlights from the strategy
  - Other Considerations



# Overall Context

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- Canada recognises that its commitment towards the 1.5-2°C temperature goal will require global emissions cuts between 70-95% from 2010 levels by 2050 with every sector moving towards zero emissions over the longer term.
- Canada drafted its Mid-Century Strategy (MCS) in the context of these decarbonisation requirements, examining possible GHG abatement opportunities, emerging key technologies, and identifying areas where reductions will be more challenging and require policy focus.
- Canada's MCS was informed by a domestic consultation effort
  - Academic workshop
  - Web portal – Solicited views from the general public
  - Consultation with stakeholders, experts, and subnational governments
- Canada's MCS was submitted on November 17<sup>th</sup> 2016 at COP22 in Marrakesh. Canada views this initial MCS as a chance to start the conversation about what a low carbon economy could entail



# Canadian Context

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- Canada is taking immediate action to address emissions in the short to medium term:
  - Pan-Canadian Framework on Clean Growth and Climate Change
  - 2030 horizon
  - Policies include national carbon pricing requirements, and important investments in clean technology.
- Canada's Mid-Century Strategy informs this process by defining long-term objectives, and demonstrating that deep cuts are possible with existing technology.



# International Collaboration

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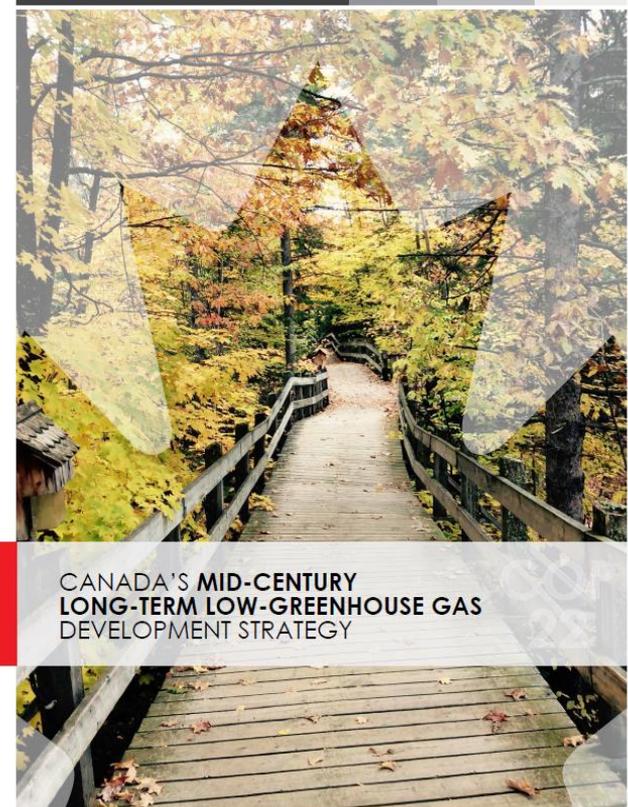
- Canada, the United States, and Mexico worked closely during the drafting of their respective Strategies:
  - Weekly calls; drafting collaboration
  - Sharing and cooperation with modelling tools and results
- Canada found this cooperation very valuable and would encourage other Parties to work closely together whenever appropriate
- Canada is pleased to share its experience and lessons with other countries regarding its mid-century low-GHG strategy:
  - Notably through the 2050 Pathways Platform; launched at COP22



# Canada's Strategy

- Presents pathways consistent with net emissions falling by 80% by 2050 relative to 2005 levels.
- Intended to illustrate the magnitude of the challenge, requiring very deep emissions cuts from every sector by mid-century
- Informed by independent and internal expert analysis, and identifies key objectives and challenges for a transition to a low-GHG economy.
- Not policy prescriptive. It is meant to start the conversation about how Canada will achieve a low-carbon economy.
- Canada is well placed to benefit from the economic opportunities of moving to a low-carbon global economy.

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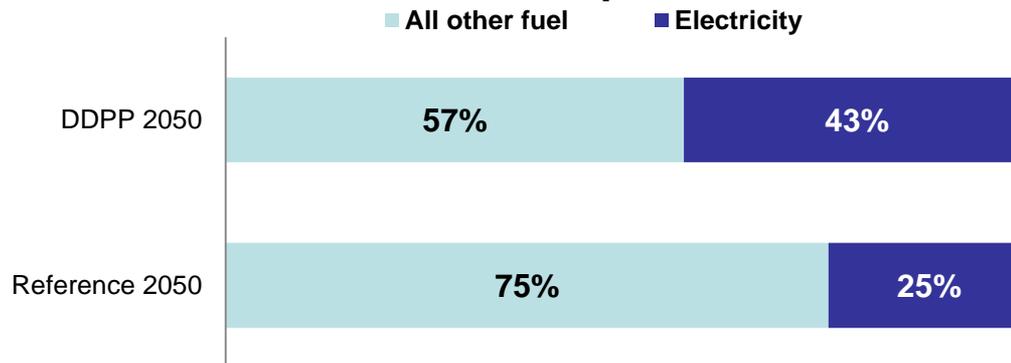
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# Electrification

- Electrification is an essential component.
- Clean electricity can fulfill future power requirements, switching away from refined petroleum products, natural gas, and other fossil fuels.
- Electrification is often accompanied by efficiency gains, especially in the transportation sector.
- Under a low-carbon future, Canada's electricity demand is expected to increase substantially by 2050.

## Electricity as a Share of National Energy Consumption

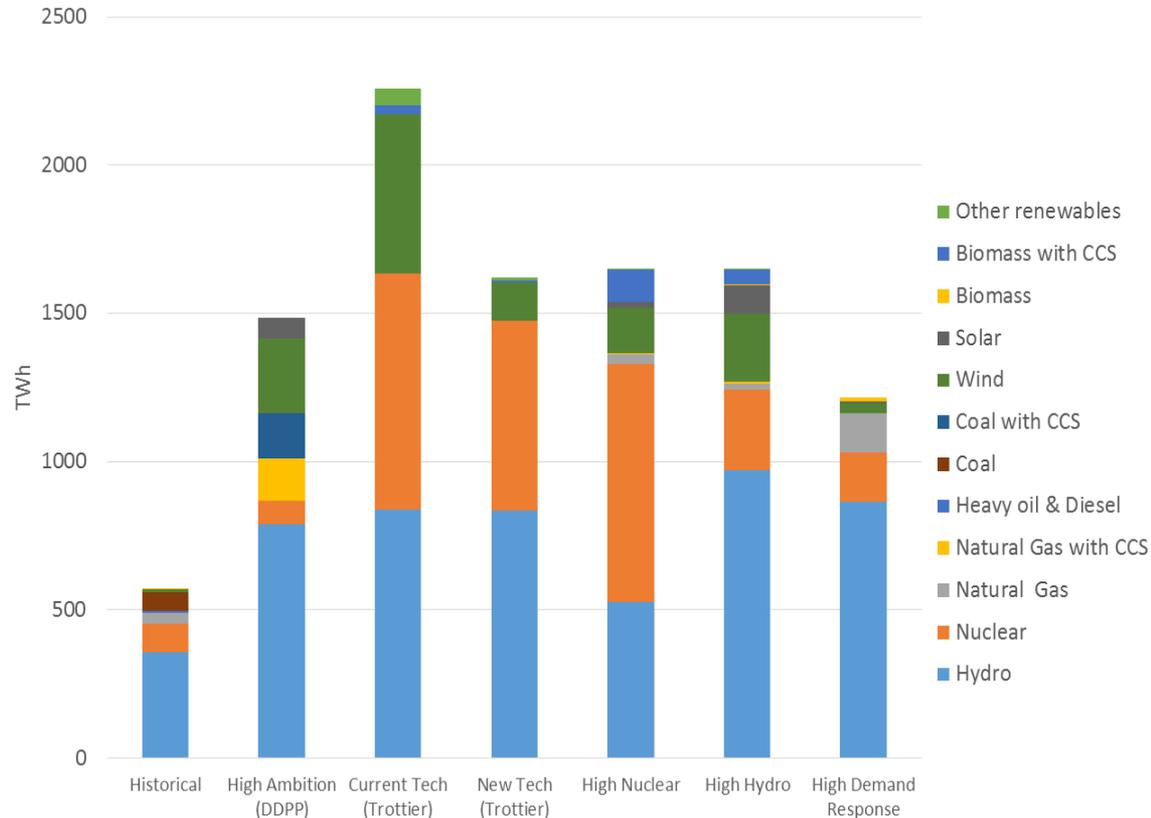


Source: Bataille, C. et al. *Pathways to deep decarbonization in Canada*.

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# Non-GHG-Emitting Electricity Generation

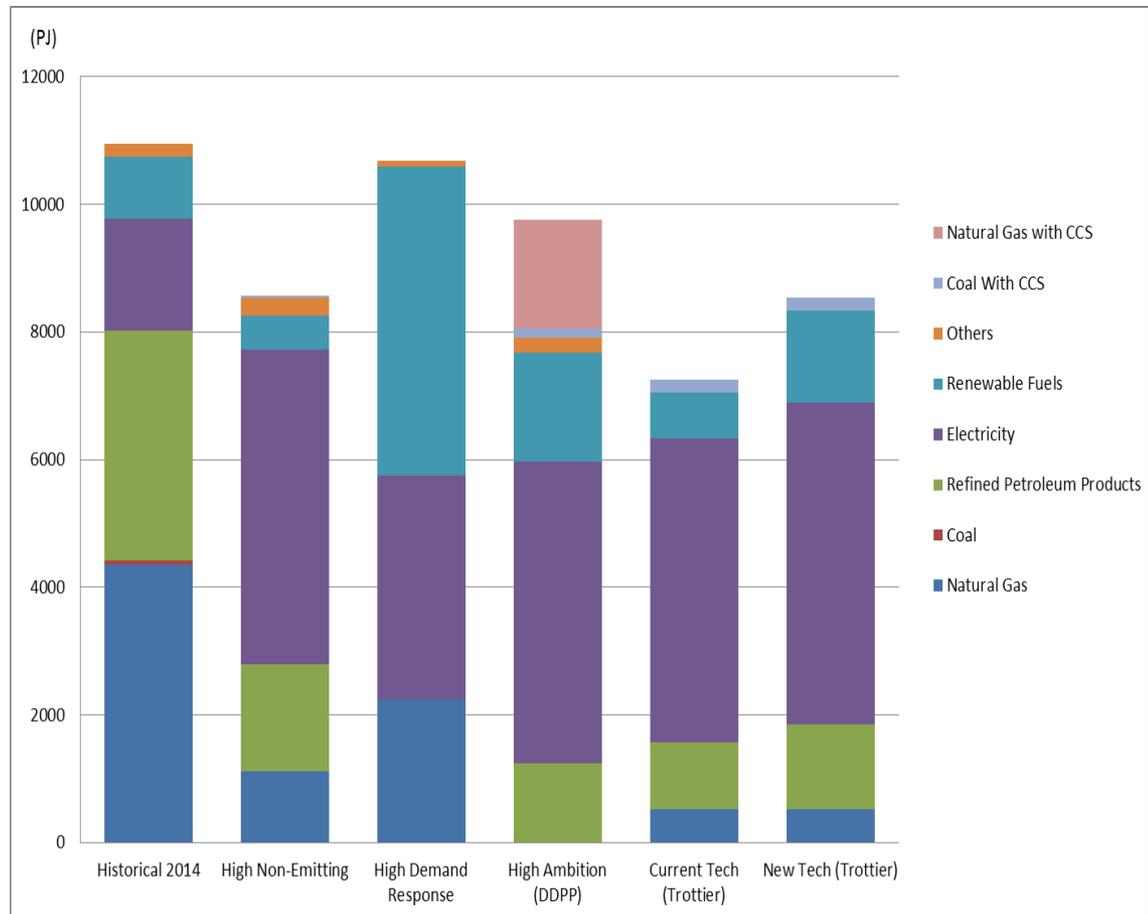
- Electricity generation to approach 100% non-GHG-emitting by 2050.
- Electricity generation in Canada is already more than 80% non-emitting, with a trend towards non-emitting generation expected to continue.
- Declining cost of renewable electricity such as wind and solar
- Future electricity generation mix will differ from jurisdiction to jurisdiction.



# The portfolio of energy consumption shifts to low emitting alternatives

- Low carbon or renewable fuels an alternative to traditional fossil fuels (e.g., renewable natural gas).
- Carbon capture and storage (CCS) apparent in the DDPP scenario.
- Traditional coal phased-out, traditional natural gas significantly reduced.
- Electricity share increases.

## Total Energy Consumption by End Use Fuel (2050)



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# Considerations

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- **Energy efficiency** and demand side management will be important.
  - International Energy Agency estimates that 38% of required global reductions associated with a 2°C pathway could be met via energy efficiency improvements.
- Abatement of **non-carbon dioxide** greenhouse gases, such as methane and hydrofluorocarbons.
  - Regulations to reduce methane emissions; target 40-45% below 2012 by 2025
  - Montreal Protocol amendment (Oct 15, 2016) to phase-down the use and production of HFCs
  - Mitigating black carbon from transport and coal fired electricity
- Potential for **sequestration** from Canada's forests and lands.
- **Innovation**, a scale up of RD&D investment, and private sector investment.
- **Collaboration** with provinces and territories, Indigenous peoples, municipalities, business and other stakeholders.



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You can read Canada's full Mid-Century Strategy at:

[http://unfccc.int/focus/long-term\\_strategies/items/9971.php](http://unfccc.int/focus/long-term_strategies/items/9971.php)

