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# Canada's Pan-Canadian Framework on Clean Growth and Climate Change

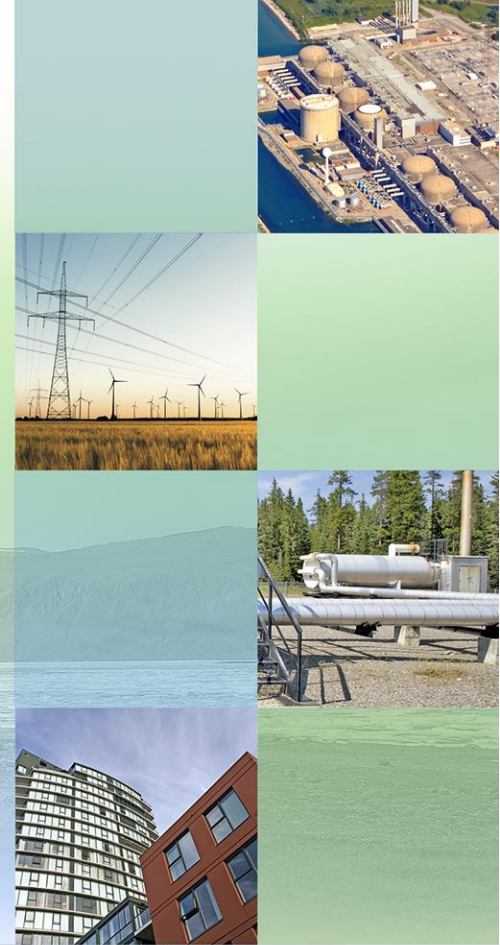
An overview of the building strategy

Ontario Geothermal Association

February 28, 2018

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Office of Energy Efficiency



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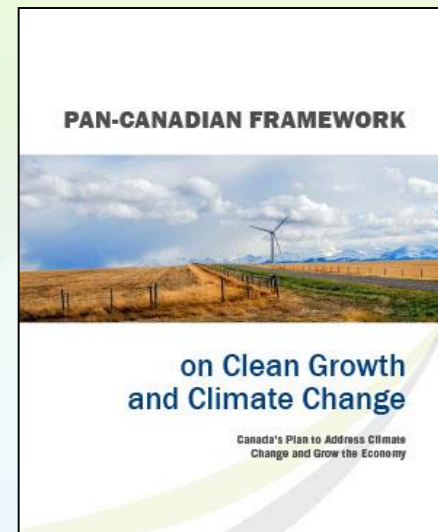
# Objectives

- Provide an overview of the building strategy under the *Pan-Canadian Framework on Clean Growth and Climate Change* (PCF)
- Share federal-provincial-territorial governments plans for market transformation in space heating
- Provide an overview of what you can expect over the next year



# Pan-Canadian Framework on Clean Growth and Climate Change

- On December 9, 2016, First Ministers adopted the first ever pan-Canadian climate plan
- The plan puts Canada on a path to meet its 2030 emissions target
- The plan has four pillars:
  - Pricing carbon pollution
  - Complementary mitigation actions to reduce emissions across all sectors
  - Adaptation and climate resilience
  - Clean technology, innovation and jobs
- Governments will work with Indigenous Peoples in implementing the plan



# Buildings: A key area of opportunity

- 17% of Canada's GHG emissions - residential, commercial and institutional buildings
- Need to address new and existing buildings
  - 75% of buildings in 2030 already standing
  - 25% of floor space will be built between now and 2030
- Collaboration between provinces/territories/municipalities, utilities, associations is key
- Efficiency improvements also provide better air quality, comfort and lower energy bills



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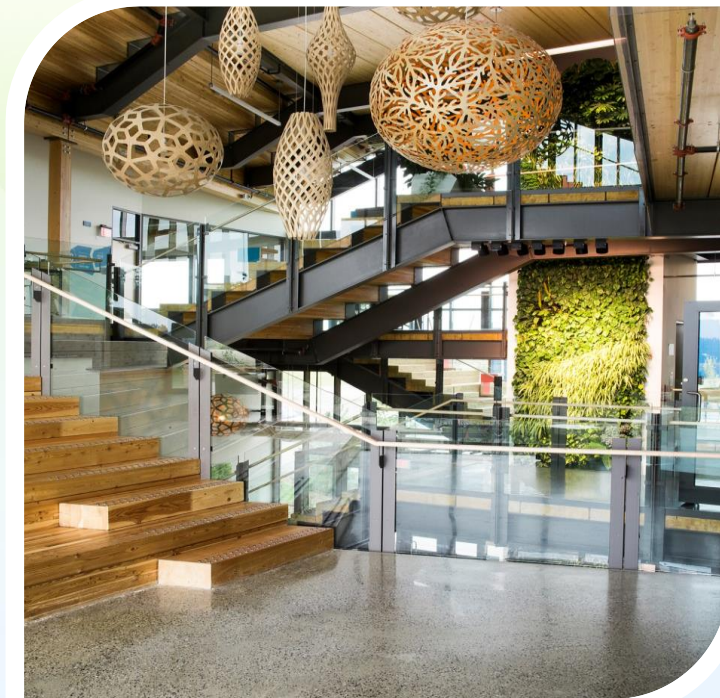
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# Measures in the Pan-Canadian Framework for buildings

1. Net-zero energy ready code for new buildings
2. Energy code for existing buildings
3. Labelling/disclosure of energy use in buildings
4. High efficiency equipment and appliances



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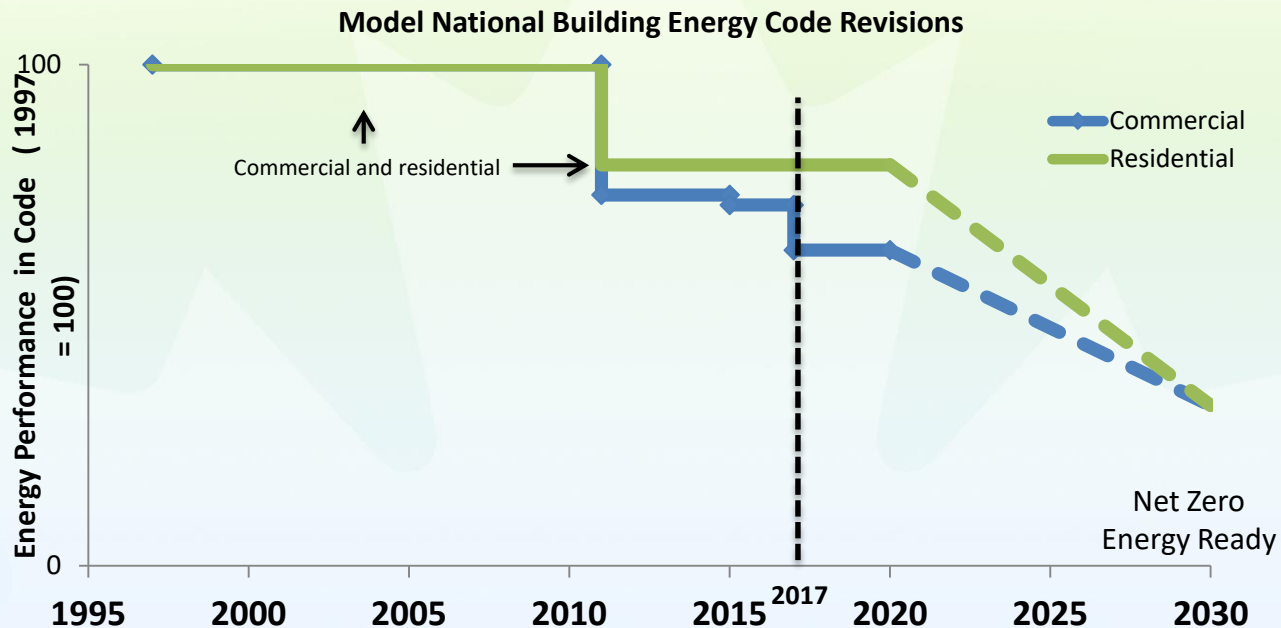
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# 1. Net-Zero energy ready codes for new buildings

- More frequent and ambitious cycle of code revisions



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## 2. Energy code for existing buildings

- Sets minimum energy performance requirements
- Model code ready by 2022 for provincial/territorial adoption
- Compliance tools, best practices and training help provincial/ territorial code adoption
- Learning from international experience



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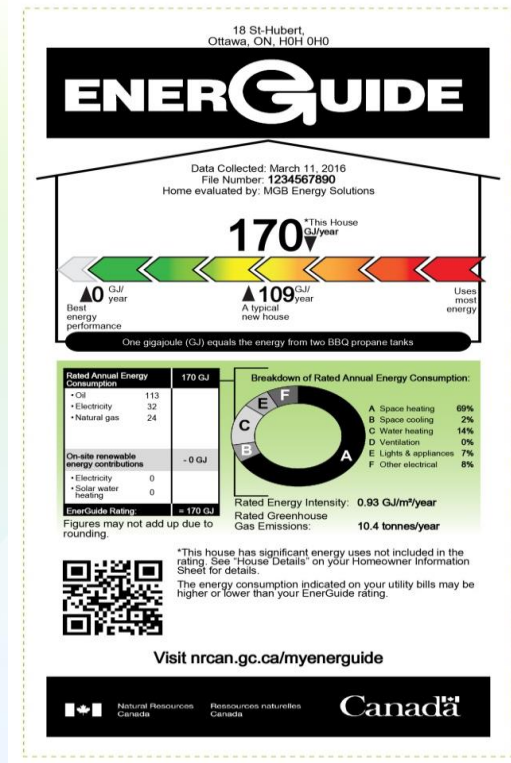
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### 3. Labelling/disclosure of energy use in buildings

- Transparent information and increased awareness
- Provinces/territories to introduce requirements as early as 2019
- Opportunity for a nationally harmonized, online approach
- U.S. experience is illustrating benefits



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## 4. High efficiency equipment and appliances

- Commitment to set new standards to levels that are economically and technically achievable
- Working on market transformation strategies with provinces and territories
- Regulations supported by consumer education through labelling



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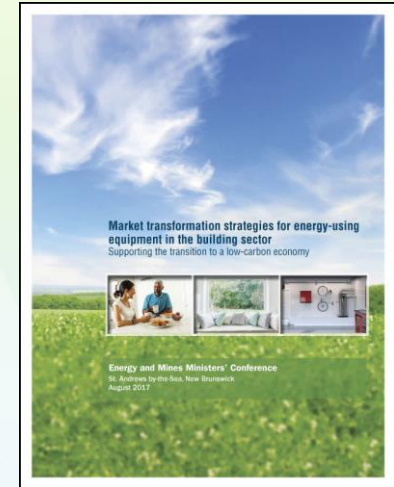
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# Implementing the Pan-Canadian Framework for equipment

- Federal, provincial and territorial governments prioritized action on space heating , water heating and residential windows
- Heating represents 64-83% of energy use in buildings; largest source of direct emissions
  - Next gen space/water heating technologies can reduce home energy use by up to 35%
- Market Transformation Strategies endorsed by EMMC ministers sets out aspirational goals for energy performance to 2030/35



# Space heating aspirational goals

## By 2025,

- All fuel-burning technologies for primary space heating for sale in Canada meet an energy performance of at least 90% (condensing technology).
- All air-source heat pumps for sale in Canada meet a SCOP of greater than 2.5, at least 30% better performance than today.

## By 2030,

- A residential natural gas heat pump with a SCOP of greater than 1.2 can be manufactured and installed cost effectively.
- A residential cold climate air-source heat pump with a SCOP of greater than 2.75 can be manufactured and installed cost effectively.
- The deployment of heating systems using renewable technologies and renewable resources are supported.

**Long term: By 2035,** all space heating technologies for sale in Canada meet an energy performance of more than 100%.

# Market transformation scorecard

## Barriers identified

- **Commercial furnaces:** Limited product availability, lack of comfort in supply chain, high upfront costs
- **Ground source heat pumps:** High upfront costs, complex installation (looping systems)
- **Cold climate air source heat pumps:** lack of commercial models, standardized test procedure, and qualified installers; high upfront costs, supply chain confidence in performance
- **Gas heat pumps:** Not fully commercialized in Canada

Market transformation scorecard – space heating

Technology	Availability Does the technology exist?	Accessibility Does the market have access to the technology?	Awareness Does the market know about the technology?	Affordability Is the technology affordable?	Acceptance Is the form, fit, and function of the technology acceptable?
Condensing commercial gas furnaces	Yes	to some extent	to some extent	to some extent	Yes
Ground-source heat pumps	Yes	Yes	Yes	No	No
Cold climate air-source heat pumps	to some extent	to some extent	to some extent	to some extent	to some extent
Gas absorption heat pumps	No	No	No	No	No

● Yes   
 ● No   
 ● to some extent

# The next step: Developing a space and water heating roadmap

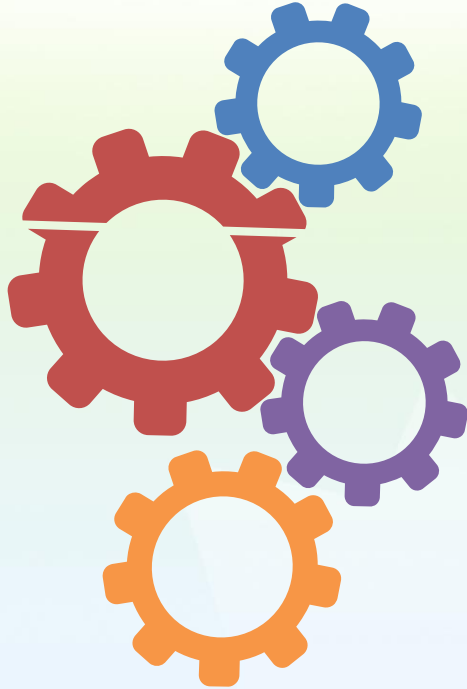
- Next step: Complete government-stakeholder workshops to develop a space and water heating roadmap for Canada
- **Purpose of roadmap:** outline concrete measures to address the barriers identified to achieving the aspirational goals, including:
  - Roles for the different players in the market (government, manufactures, utilities, etc.)
  - Priority activities for R&D and market deployment
  - Timing for the roadmap initiatives
  - Tracking progress
- Roadmap designed to be a joint plan for government and stakeholders

# The next step: Developing a space and water heating roadmap (con't)

- First workshop: R&D (November 2017)
  - **Goal:** identify R&D priorities so that we can meet the cost and performance targets in the market transformation strategies
  - Discussion guided by stakeholder expertise; could include design issues and improved manufacturing processes
- Second workshop: market deployment (February 2017)
  - **Goal:** identify market deployment priorities for technologies that meet performance levels identified in aspirational goals
  - Discussion will include reps from utilities, manufacturers, codes, industry associations, governments
- Roadmaps to be submitted to energy ministers in summer 2018



# Upcoming milestones



## Spring 2018:

- Share deployment workshop summaries
- Launch work on a national recommissioning framework for commercial and institutional buildings
- Launch ENERGY STAR certification for commercial buildings
- Launch of Low Carbon Economy Challenge Fund

## Summer 2018:

- Publish equipment roadmaps
- Publish update on implementation of building strategy

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# Thank you!

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