

# RAIC | IRAC

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To the Standing Senate Committee on Energy, the Environment and Natural Resources and Senator Howard Wetston

From the Royal Architectural Institute of Canada

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## Response to questions about the [Pan-Canadian Framework on Clean Growth and Climate Change](#)

### From Senator Wetston:

- a. What does the RAIC think about it in general terms?
- b. Will it be sufficient to meet the goals that the Government of Canada has set for 2030?
- c. If not, what is necessary from the RAIC's perspective?

**RAIC:** The RAIC supports the Pan-Canadian Framework on Clean Growth and Climate Change – which includes working closely with the National Research Council, Natural Resources Canada, and all stakeholder to set increasingly stringent energy codes.

New construction code targets are expected to be released in 2020, with the goal of adopting net-zero energy model codes by 2030. Existing construction model codes (referred to as the codes) are to be announced by 2022. Published targets should provide expectations of each step for provincial and territorial adoption.

Tools such as comparative benchmarking of energy and GHG use are key to driving behavioural change at the operational level. The framework should incorporate renewable energy sources and consider district/community scale design versus single building energy and GHG performance.

Speed and consistency of adoption across Canada are of concern. The core recommendation is for the federal government to immediately adopt the advanced targets when they are announced and demonstrate leadership within their built environment footprint – owned, leased and managed.

### 1. Making new buildings more energy efficient

- The goal of developing a net zero energy ready model building code by 2030 is too slow a timeline. 2030 is itself too long a timeframe plus it will take one to five years for the model codes to be adopted across Canada.

- The Canada Green Building Council's Zero Carbon Building pilot program, which includes 16 public and private sector projects from across the country, demonstrates that zero carbon buildings are already entering the market. These projects will provide robust data on the cost effectiveness of zero carbon buildings as well as challenges on the technical and code aspects, among others.
- Further, other jurisdictions are moving at a much faster pace. For example, California has developed a New Residential Zero Net Energy Action Plan 2015-2020 in support of their goal to have 100 percent of new homes achieve zero net energy beginning in 2020. All new state buildings will be Zero Net Energy by 2025.

## 2. Retrofit existing buildings

- Similarly developing a model code for existing buildings by 2022 is also too slow a timeline. This leaves an eight-to-10-year window for the adoption of energy efficiency and renewable energy standards for existing buildings. Energy efficiency retrofits are the key leverage point for Canada to reach sufficient carbon reduction outcomes in the built environment sector. Without codes, the pace of change will be insufficient. Additionally, other jurisdictions will move forward resulting in a lag in Canadian clean technology expertise.
- Citing California again: their Zero Net Energy Building Goals include retrofitting 50 percent of existing commercial buildings to Zero Net Energy by 2030, and all retrofits of state buildings to be Zero Net Energy by 2025.
- Mandatory labelling of building energy use by 2019 is a key step. A second step that should be considered is GHG labeling as well as water use labeling. Pumping of water can represent 30 to 50 percent of municipal energy use which in-turn drives municipal GHG emissions.
- Tools to allow comparative benchmarking of energy and GHG use are key to driving behaviour change at user levels and investments in energy efficiency at building owner/operator levels. Comparative information is key to understanding relative performance. Furthermore, this information is essential to the development of effective existing building energy performance requirements within new building energy codes.

## 3. Improving energy efficiency for appliances and equipment

- Canada lags behind other jurisdictions in terms of energy efficiency standards for appliances and equipment. The Framework lacks specificity on efficiency

goals for appliances and equipment. Other jurisdictions should be used to inform Canadian standards. For example, Japan substantively reduced demand for nuclear power through efficiency and energy conservation. Their Top Runner Program is a model program setting the mandatory energy efficiency threshold for a broad range of appliances and equipment based on the most energy-efficient model available on the market at the time the standard was established, and continues to update the threshold periodically based on ongoing improvements. This drives both energy efficiency and market competition.

#### 4. Other

- The Framework is missing an emphasis to drive renewable energy use. The European Union Renewable Energy Directive is one of the key pillars of their 2030 plan.
- The Framework does not currently contemplate the significant potential of district/community scale design for energy and GHG performance and is solely focused on single building performance. District/campus scale projects allow for step scale change and leverage emissions reductions across multiple buildings. District energy systems support load shifting, allow a diversity of alternate low carbon energy supply options to be plugged in, reduce transport and distribution losses over a conventional grid, and strengthen resiliency, among other benefits.