Written Submission for the Pre-Budget Consultations in Advance of the 2019 Budget

By: Efficiency Canada

Brendan Haley, PhD

Policy Director

Corey Diamond,

Executive Director

August 3, 2018

c/o Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6
info@efficiencycanada.org

List of Recommendations

- **Recommendation:** That the government prioritize implementing the energy efficiency actions in the Pan-Canadian Framework in Budget 2019.

The Economic Growth and Competitiveness Benefits of Energy Efficiency

Synopsis

This submission demonstrates how improved energy efficiency boosts economic growth and improves economic competitiveness in multiple sectors. We will discuss the results of a recent macroeconomic modelling study that estimated the **jobs and GDP impacts of implementing the Pan-Canadian Framework's energy efficiency measures**.[1] We will also reference a recent study on **Energy Efficiency Potential in Canada** conducted by the International Energy Agency for Natural Resources Canada.[2]

Efficiency Canada's "**economic impact**" study showed that implementing the Pan-Canadian Framework's energy efficiency actions would add 118,000 jobs (average annual full-time equivalent) and increase GDP by 1% over the baseline forecast, by 2030. Every $1 spent on energy efficiency programs generates $7 in GDP.

Every $1 spent on energy efficiency programs generates $7 in GDP

The "**energy efficiency potential study**" showed that the energy we save could account for more than 40% of Canada's energy needs by 2050. It also improves the competitiveness of Canada's oil and gas sector - leading to an increase in Canada's net fossil fuel trade balance because fewer energy inputs are used to produce the same output.

The Economic Impact of Improved Energy Efficiency in Canada

Efficiency Canada worked with Clean Energy Canada to commission Dunsky Energy Consulting and the Center for Spatial Economics to model the economic impacts of implementing the building energy efficiency initiatives in the Pan-Canadian Framework on Clean Growth and Climate Change (PCF).

The modelling considers the "net" effects of energy efficiency policy changes. This means the study considered both the benefits of energy saving ,as well as the costs governments, households, and businesses pay to implement efficiency actions, as well as the impacts of reduced fuel use on economic sectors (such as reduced energy sales to utilities).

The positive net economic impacts occur because of increased demand for efficiency-related goods and services - for example, hiring renovation contractors. A large amount of the economic impact occurs because households and businesses save on energy bills. Under the PCF, Canadian consumers would save $1.4 billion on energy bills per year, on

[1] https://www.efficiencycanada.org/wp-content/uploads/2018/05/Report_LessIsMore_EconomicImpactStudy-2018-05-01.pdf

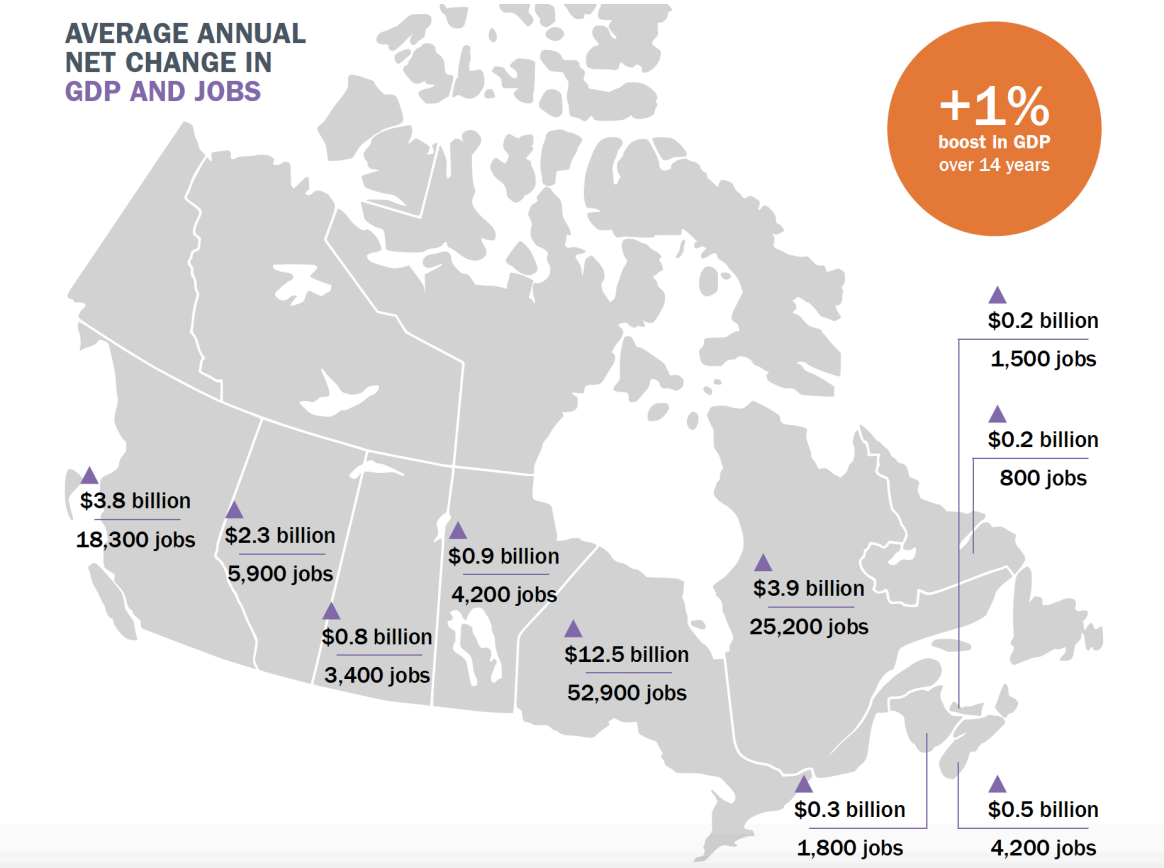
[2] https://webstore.iea.org/insights-series-2018-energy-efficiency-potential-in-canada

average ($114 per year, per residential household). These savings increase economic impact when they are re-spent in the domestic economy. Canadian businesses would save, on average, $3.2 billion each year. These savings can be re-invested in a way that improves productivity and competitiveness.

Overall, the model showed that the PCF energy saving actions would add 118,000 jobs (annual average full-time equivalent) to the Canadian economy, and increase GDP by 1% over the baseline forecast, between 2017 and 2030. Every $1 spent on energy efficiency, generates $7 in GDP.

Furthermore, these positive impacts are distributed across the country. The annotated map below shows the jobs and GDP impacts per province.

Figure 1: Economic Impacts of Pan-Canadian Framework Energy Efficiency by Province



Source: Clean Energy Canada and Efficiency Canada, Less is More

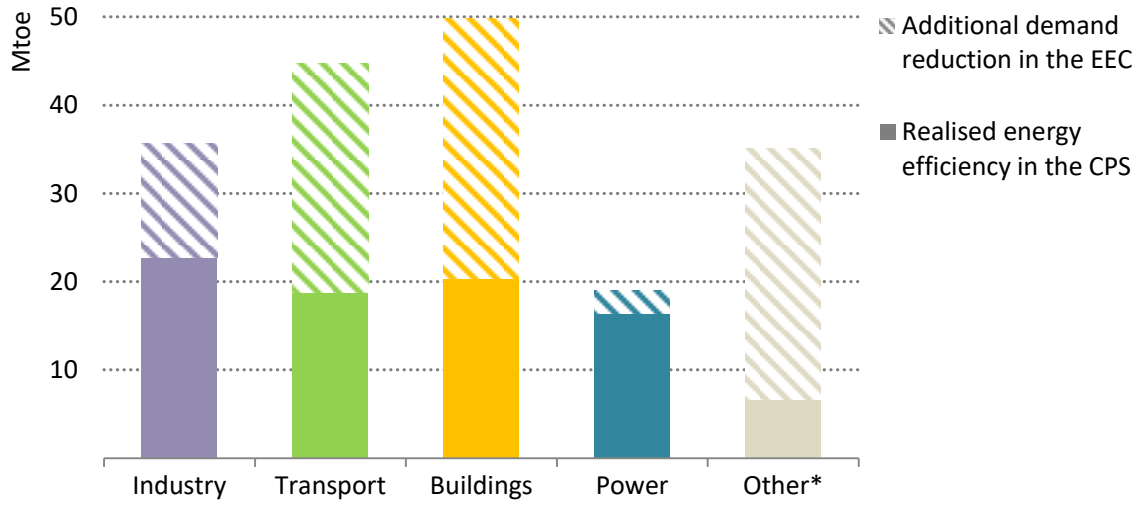
Canada's Energy Efficiency Potential

The opportunities to produce positive economic impacts through energy efficiency are large because there is vast potential to reduce energy waste. The economic impact study also modelled energy savings above the PCF scenario that could occur if all provinces adopted "best in class" efficiency efforts for each fuel type. For instance, electricity programs would ramp up to save 2.5% of sales per year – a level that is currently achieved in Massachusetts and Rhode Island. Natural gas savings would ramp up to 1.75% of sales per year.

These more aggressive savings had higher costs, but also produced greater net economic impacts. The average annual number of jobs increased from 118,000 to 174,000, and net average annual increase in GDP increased from $25.4 billion to $42.5 billion.

Canada's potential to aggressively improve energy efficiency was recently demonstrated by the International Energy Agency's national energy efficiency potential study for Canada. This study estimated the amount of energy savings available in an "Energy Efficiency Scenario" beyond a "Current Policies Scenario". As shown in the graph below, the study identified opportunities to reduce demand, in all sectors, beyond what is projected to occur under policies already implemented.

Figure 2: Avoided energy demand owing to energy efficiency measures in the Current Policies Scenario and the Energy Efficiency Case, 2050



* Non-power energy supply and transformation sectors, and agriculture.

Notes: EEC = Energy Efficiency Case; CPS = Current Policies Scenario. For the power sector, the reduction in primary energy demand excludes the effect of declining electricity demand but includes improvements in power grid efficiency. Realised energy efficiency in the Current Policies Scenario does not include energy demand reductions resulting from structural changes within a sector.

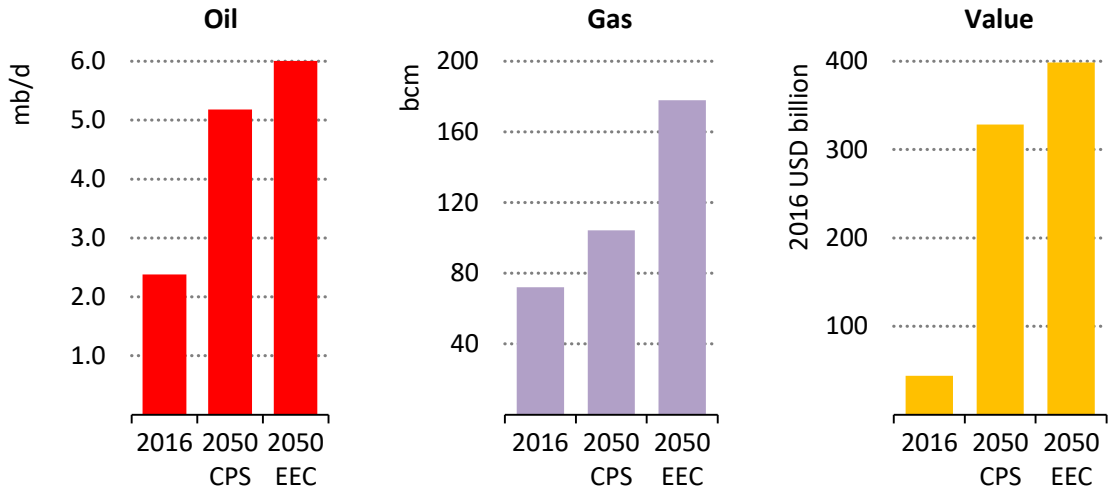
Source: IEA 2018: Energy Efficiency Potential In Canada

Competitiveness and a "No Regrets" Economic Strategy

Both studies also have important implications for the competitiveness of Canadian industry. The major effect driving the results of the economic impact study, over the long term, is the decreased use of energy inputs by industry resulting in an increase in the share of capital and labour to produce the same goods. As firms use new energy efficient technologies and hire additional workers, the Canadian economy captures greater value from production (i.e. the Canadian "value added share" increases). The competitiveness of Canadian firms improves because they spend less on inputs to produce the same output. In addition, a greater amount of the value derived from producing and selling Canadian products is captured by Canadian workers and businesses rather than foreign energy producers.

The benefits of improving energy productivity are clearly demonstrated for Canada's oil and gas sector, in the Efficiency Potential Study. The scenarios run by the IEA estimates a boom in global demand for fossil fuels. Energy efficiency significantly reduces the energy demands that come with increased oil and gas extraction, and this increases Canada's net fossil fuel trade balance because fewer energy inputs are required. As the figure below shows, the increase in energy productivity results in both higher export volumes as well as higher valued oil and gas exports. The result is "additional cumulative fossil fuel trade revenues of more than USD 1 000 billion over the period" studied.[3]

Figure 3: Net trade balance of oil and gas in volume and value terms for Canada



Note: CPS = Current Policies Scenario; EEC = Energy Efficiency Case.

Source: IEA 2018: Energy Efficiency Potential In Canada

Furthermore, efficiency is a "no regrets" policy, regardless of the export demand scenario. Efficiency improvements will improve competitiveness if international demand for Canadian resources increases as projected by the IEA "Current Policies Scenario". In the event of

[3] See IEA 2018: Energy Efficiency Potential In Canada, p. 37.

less international demand, improved energy productivity will also help Canadian firms maintain export share, and energy efficiency initiatives can be a source of direct job creation in the event of unemployment increases.

Energy efficiency will make Canada more resilient in a volatile international economic environment

This is only one example of how increased energy productivity can make Canadian exports more competitive. Other industries and small businesses can cut their costs through energy efficiency, which will make their products more internationally competitive and could help weather economic storms. Household energy efficiency will produce savings that will increase domestic economic demand.

Policy Priorities

Our high-level policy recommendation is that Budget 2019 must prioritize implementing the energy efficiency measures of the Pan-Canadian Framework. This is a first step towards realizing Canada's energy efficiency potential, and it will deliver significant economic benefits and improve Canada's competitive position over the long-term.

The Pan-Canadian framework includes the following energy efficiency actions:

1) **Making new buildings more energy efficient**
   Provinces and territories adopt a net-zero ready model building code by 2030.

2) **Retrofitting existing buildings**
   A model building code for existing buildings by 2022, building energy use labelling by 2019, and expansion of building retrofit efforts.

3) **Improving energy efficiency for appliances and equipment**
   New standards for heating equipment and other key technologies.

4) **Supporting Indigenous Communities**
   Improved efficiency standards and incorporate efficiency into building renovations.

5) **Improving industrial energy efficiency**
   Support the adoption of energy management systems. The recent *Generation Energy Council* Report aims to have 75% of industrial energy use covered by energy management systems by 2030.

More support is needed to implement these policy priorities. In some cases, such as building labelling, slow implementation will result in a delay in meeting targets.

Efficiency Canada is currently in the process of convening energy efficiency sector representatives and experts to define core priorities for this budget. We anticipate this process will outline a more detailed set of policy recommendations by September.

About Efficiency Canada

Efficiency Canada is a new organization, launched in May 2018, that acts as the national voice for an energy efficient economy. Efficiency Canada is an operating unit of the Carleton University Sustainable Energy Research Centre. We envision a future where energy efficiency is widely recognized as the “First Fuel”, where energy savings improve by at least 2% per year, and where efficiency support job growth across all sectors and provinces.