



Natural Resources  
Canada

Ressources naturelles  
Canada



# Energy Efficiency – Enabling Canada’s Clean Energy Future

Report to Parliament under  
the *Energy Efficiency Act*

**2019–2020**

Canada





Natural Resources  
Canada

Ressources naturelles  
Canada

# Energy Efficiency – Enabling Canada’s Clean Energy Future

Report to Parliament under  
the *Energy Efficiency Act*

**2019–2020**

Canada

*Aussi disponible en français sous le titre : L'efficacité énergétique pour favoriser une énergie propre pour le Canada, Rapport au Parlement en vertu de la Loi sur l'efficacité énergétique 2019-2020*

© Her Majesty the Queen in Right of Canada, as represented by the Minister of Natural Resources, 2021

For information regarding reproduction rights, contact Natural Resources Canada at [nrcan.copyright-droitdauteur.rncan@canada.ca](mailto:nrcan.copyright-droitdauteur.rncan@canada.ca).

Cat. No. M141-36E-PDF  
ISSN 2562-1408

The ENERGY STAR and Portfolio Manager names and the ENERGY STAR symbol are trademarks registered in Canada by the United States Environmental Protection Agency and are administered and promoted by Natural Resources Canada.

# Contents

- Message from the Minister of Natural Resources..... 2
- Energy efficiency - Driving us toward Canada’s net-zero future..... 3
- Homes, buildings & communities ..... 6
- Industry..... 8
- Transportation & alternative fuels .....10
- Leading by example..... 12
- Looking to the future.....14
- Annex 1. *Energy Efficiency Regulations*..... 15
- Annex 2. *Energy Efficiency Regulations* - Stringency comparison .....16
- References ..... 17



# Message from the Minister of Natural Resources

The COVID-19 pandemic has affected Canadians in so many ways. It has taken a toll on our health, our communities, and our businesses and industries. There is light at the end of the tunnel, but this pandemic has laid bare many of the challenges we face. One of the most urgent among these is climate change, which is already affecting communities across the country. The steps we are taking today set us on course to reach net-zero emissions by 2050, and to build a stronger, more resilient and more competitive Canada.

Our government has introduced legislation committing Canada to net-zero emissions by 2050. We have developed a strengthened climate plan, *A Healthy Environment and a Healthy Economy*, and invested \$53 billion towards a green recovery that includes all Canadians. We are helping Canadians improve the energy efficiency of their homes and lower emissions; helping workers to develop new skills so they can lead and succeed in a low-carbon economy; and supporting Canadian business and industries, keeping them competitive, innovative and able to meet the growing demand for low-carbon products.

This report highlights progress made in 2019–2020 towards Canada's climate commitments through improvements in energy efficiency and clean fuels. Through research, stringent national standards, capacity building and strategic investments, we are accelerating efficiency efforts in homes, buildings, industry, and transportation.

In 2020, Canada joined the Three Percent Club with international partners, including 15 other countries, committing to working toward a 3% improvement in global energy efficiency every year. This requires federal departments, provinces and territories, municipalities and domestic and international stakeholders to keep working together to encourage smarter energy use and drive further improvements in energy efficiency.

Energy efficiency is our 'hidden fuel'. It takes us a long way towards exceeding our climate targets. We have made progress over the past year, and we will maintain this momentum going forward. Emerging areas of work include modernizing our legislative and regulatory tools, establishing innovative financing models to accelerate retrofits, supporting inventive approaches to decarbonize industry and transportation, and executing new strategies to help us evolve with a changing, digitalized world.

Together, we will improve Canada's energy efficiency and get to net-zero by 2050.

**The Honourable Seamus O'Regan Jr., P.C., M.P.**  
**Minister of Natural Resources**

# Energy efficiency – Driving us toward Canada’s net-zero future

**Energy efficiency is the fastest, cleanest and most inexpensive way to help build Canada’s energy future.**

Canada is committed to achieving net-zero emissions by 2050. Globally, there is recognition that smarter energy use (e.g. energy efficiency and switching to lower carbon fuels) will lower energy demand and emissions, save money, reduce pressure on energy infrastructure, improve competitiveness and create jobs.

**Energy consumption in Canada is high and still largely dependent on fossil fuels. Demand continues to grow.**

Efficiency solutions available today have the potential to reduce primary energy demand by more than one third by 2050. Canadians have the know-how, the skills, the technologies and the will – but we need to accelerate climate action now. Driving energy efficiency is a key component of the government’s plan to build a strong, clean and more resilient Canada.

## Smarter energy use: It’s essential.



**30%**

of global energy demand can be reduced through energy efficiency. However, current demand continues to rise at least 2% per year.

**Reduces energy demand and related emissions**

**\$2,062**

Amount the average Canadian household spent on energy costs in 2018

**Helps Canadians save money, improve health and comfort, and reduce energy poverty**

**UP TO 45%**

Portion of operating costs in some industrial sectors that are energy-related

**Helps Canadian businesses save money and improves competitiveness**

**436,000**

Number of workers directly employed in the energy efficiency sector in Canada in 2018. This is growing faster than the overall economy.

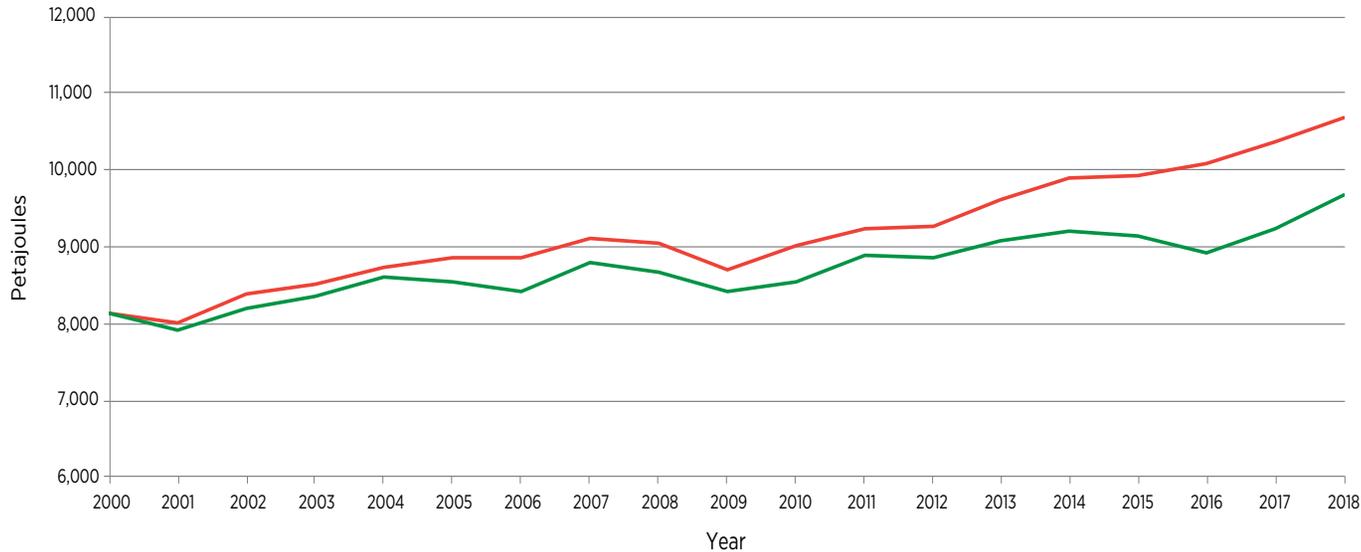
**Creates green, well-paying, local jobs**

# Energy efficiency is working

Over the past 20 years, we have made great strides through technology advancements, policies, programs, and consumer and business choices that have demonstrated that energy efficiency is an essential part of Canada's low-carbon

future. Efficiency measures have lowered greenhouse gas (GHG) emissions by nearly 55 megatonnes (Mt) and saved Canadians more than \$26 billion while ensuring that our energy use grew at a slower rate than our GDP.

**Final energy use, with and without energy efficiency improvements, 2000–2018\***



## Energy efficiency gains in 2018:

**1,002** petajoules (PJ) energy saved

**\$26.2** billion of avoided energy costs

**54.7** Mt of avoided emissions

- Energy use without energy efficiency improvements (PJ)
- Energy use with energy efficiency improvements (PJ)

Canada boosted its energy efficiency by

**12.3%**



That's an annual savings equivalent to . . .

**9,171,094**

homes' energy use



**20,283,686**

passenger vehicles' fuel consumed



**159,831,987**

barrels of oil consumed



\*Base year for National Energy Use Database (NEUD) changed from 1990 to 2000, beginning with the release of 2018 data. See the Reference page for further details.

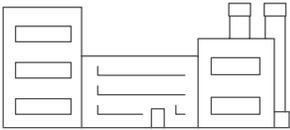
# Driving energy efficiency – Putting the building blocks together

Energy efficiency is a shared responsibility. Increasing the uptake of energy efficiency measures demands a concerted effort across all sectors and jurisdictions. That is why, together with the provinces and territories, we are implementing *Build Smart – Canada’s Buildings Strategy*. It is also why we provided an additional \$950 million in Budget 2019 to the Federation of Canadian Municipalities’ Green Municipal Fund to make homes and buildings more energy-efficient in communities across Canada.

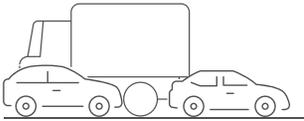
**Other key collective actions supporting implementation of Canada’s climate plan in 2019–2020 will be explored in this report under the following categories:**



**Homes, buildings & communities**



**Industry**



**Transportation & alternative fuels**



**Leading by example**



# Homes, buildings & communities



## What's the problem?

Seventy-five percent of the buildings that will be standing in 2030 have already been built. The energy we use to power, heat and cool our homes and buildings accounts for 18% of Canada's GHG emissions and is growing. A massive retrofit of Canada's building stock is needed to drive reduced energy use in the sector; however, our current retrofit rate is around only 1% annually. We need to increase the rate of retrofits to reach our climate targets.

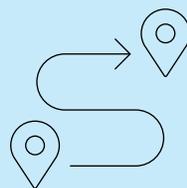
## What's our opportunity?

Big investments in retrofits now, together with net-zero new buildings, will put us on track to control emissions from this sector and reduce pressure on new clean energy systems. We can do this while simultaneously advancing economic growth, creating jobs and improving well-being through building resiliency and comfort. The increased demand for energy-efficient equipment and low-carbon materials will grow Canada's green building supply chain.

## What we're doing now

Under *Build Smart – Canada's Buildings Strategy*, we are working with the provinces and territories to make homes and buildings more energy-efficient. We have a growing toolbox of measures, including:

- **Codes and standards** to remove less efficient practices and products from the market and advance uptake of the next generation of buildings technologies and products
  - Ambitious model energy codes for homes and buildings
  - Increasingly stringent minimum energy performance standards under the *Energy Efficiency Regulations* for appliances and equipment used in homes and buildings and a market transformation roadmap focusing on space and water heating
- **Research, development and demonstration (RD&D)** projects for high-performance buildings to build industry confidence and pave the way for future code adoption
- **Information tools** that set the stage for retrofit action by benchmarking, labelling and recognizing energy performance in homes and buildings. National tools such as EnerGuide and ENERGY STAR® help Canadians and businesses build capacity and make informed decisions.
- **Investments to support sustainable, resilient communities** by empowering local capacity and community-driven solutions through the Green Municipal Fund and clean energy projects in Indigenous and northern communities



## What still needs to be done

A healthy low-carbon economy needs more public and private financing for building energy retrofits, leveraging existing information tools and embracing new innovative financing models. Accelerating investments in home and building upgrades creates new demand for local jobs – we need the next generation of skilled workers ready to build, renovate and operate high-performance buildings. And we can use this opportunity to attract and train underrepresented groups for a more diverse and inclusive workforce.

# Actions in 2019–2020

The provinces and territories endorsed the harmonized adoption of model energy codes for new homes and buildings through the [Regulatory Reconciliation and Cooperation Table](#). The 2020 update of the national [model energy codes](#) for new buildings and homes will, for the first time, include net-zero energy-ready tiered performance levels, reaching **60% and 70%** better energy performance relative to the baseline, respectively.



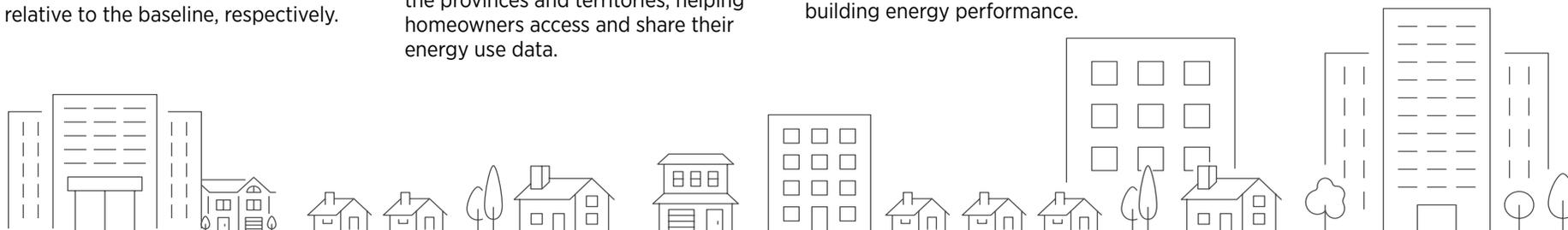
Over **87,000** existing homes were evaluated with the [EnerGuide Rating System](#) – a nationally recognized tool used by nearly 60 provincial, territorial, municipal, utility and industry partners.

The [EnerGuide Home Labelling Portal](#) was developed and launched with the provinces and territories, helping homeowners access and share their energy use data.



Over **25,000** buildings – representing over 30% of commercial and institutional floor space in Canada – were captured in [ENERGY STAR Portfolio Manager](#). This free-to-use tool provides an on-line platform for building owners and operators to benchmark, monitor and report on building energy performance.

**\$218 million** from the proceeds of the federal carbon pollution pricing system were provided to the [Climate Action Incentive Fund](#), funding retrofit projects by small and medium-sized enterprises, and in the Municipalities, Universities, Schools and Hospitals – or MUSH – sector.



Over **30** RD&D projects with industry and the provinces and territories were supported through the [Energy Innovation Program](#) and [Energy Efficient Buildings Program](#) to bring down costs and support adoption of building codes.

Funding provided to **169** Ontario retailers through the [Energy Savings Rebate Program](#) that was launched in June 2019, providing point-of-sale consumer rebates on the purchase of energy-efficient products.



Over **10,000** new homes have received EnerGuide, ENERGY STAR® or R-2000 labels, saving 20% to 50% more energy than typical new homes.

**19** product categories have strengthened minimum energy performance standards through amendments to Canada's [Energy Efficiency Regulations](#) published in June 2019. (See Annex 1 for additional details).

**187** buildings were certified since 2018 through the [ENERGY STAR Certification Program](#) for commercial and institutional buildings, which recognizes high-efficiency performance among 10 building types.

**74** heat pumps were installed in field studies across Canada, supporting [market transformation](#) of high-efficiency windows, space heating and water heating.

**\$950 million** was endowed to the Federation of Canadian Municipalities' [Green Municipal Fund](#) for sustainable affordable housing, innovative financing programs and community climate action, including Low Carbon Cities Canada (LC3) centres in seven major cities.

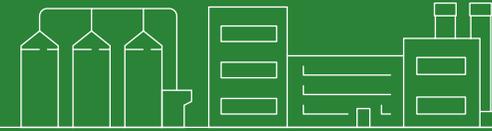
**6** energy efficiency projects in 10 northern communities were funded through the [Northern REACHE](#) program.

**ACTION  
IN FOCUS**



Canada's 10-year, \$55-billion [National Housing Strategy](#) is supporting initiatives such as the \$13.2-billion [National Housing Co-Investment Fund](#), which sets minimum energy efficiency and emission reduction requirements for the construction and renovation of accessible and socially inclusive housing. Other programs under the Strategy include the [Affordable Housing Innovation Fund](#) and the [Rental Construction Financing Initiative](#), which funded a new high-rise in Calgary with 121 rental units. The building is realizing energy savings of 57% and further reducing GHG emissions by being powered by renewable energy.

# Industry



## What's the problem?

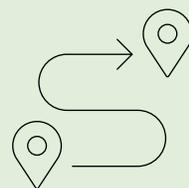
Industrial operations account for nearly 40% of Canada's energy use and GHG emissions and remain among the most energy-intensive in the world. Energy is a major cost for business, and energy demand is projected to continue to increase. Yet, the industrial sector faces persistent barriers to decarbonization including lack of awareness, significant upfront costs and limited capacity to implement changes.

## What's our opportunity?

Industrial energy efficiency improved 9% between 2000 and 2018. And still, over 70% of potential industrial energy savings from existing technologies remain untapped. As we innovate and adopt energy management solutions, our industrial sector will improve its competitiveness, productivity and environmental performance.

## What we're doing now

- **Funding and incentives** for industrial energy management systems and projects to help businesses monitor, document and improve their energy performance and reduce operating costs without affecting productivity
  - ISO 50001 energy management system implementation projects
  - Embedding energy managers in businesses and undertaking energy audits
  - Studies to identify efficiencies in complex industrial processes
- **Information and capacity building** through a network of industries and governments working together to find energy efficiency solutions and recognition programs such as ENERGY STAR® for Industry
- **Innovation to advance clean technologies** toward commercial readiness through co-funding RD&D projects in the energy, mining and forest sectors
- **Minimum energy performance standards** under the *Energy Efficiency Regulations* to set requirements for a wide range of energy-using products across the industrial sector, such as electric motors and transformers



## What still needs to be done

Existing initiatives have built a solid foundation for improved energy and emissions performance in the industrial sector. However, progress remains limited. Canada's target of net-zero emissions by 2050 cannot be met without addressing industrial energy use. We need to accelerate uptake of energy management systems and raise the level of ambition in implementing activities across the industrial decarbonization spectrum – energy efficiency, electrification and fuel switching.

# Actions in 2019–2020



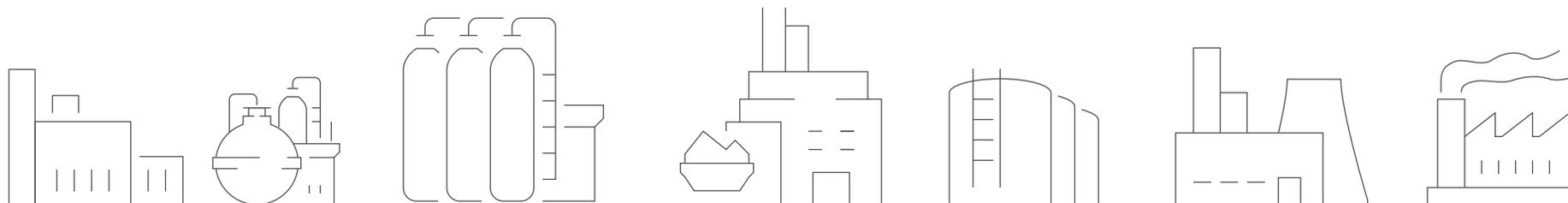
**18** facilities were certified as high-performing through the [ENERGY STAR® for Industry certification](#) program since it launched in 2018. The program uses sector-specific benchmarking models to recognize facilities in the top quartile of energy performance.

**21** projects were funded through the new \$3 million [Energy Manager Program](#) launched in June 2019. This includes 17 energy managers embedded in businesses and 15 energy and fleet assessments in small and medium-sized enterprises, municipalities, universities, schools, hospitals, and Indigenous communities.

Research, development and demonstration (RD&D) programs support the innovation spectrum, from emerging and disruptive technologies to near-commercial pilot-scale initiatives. The [Clean Growth Program](#), [Energy Innovation Program](#), [Impact Canada Clean Technology Challenge](#) and the [Program for Energy Research and Development](#) are leading to breakthroughs in energy-efficient industrial processes.

## Did you know?

The [Greenhouse Gas Equivalencies Calculator](#), launched in 2019, helps you estimate the equivalent amount of carbon dioxide emissions of your home or vehicle energy use by translating emissions data into everyday comparisons. In 2018, industry in Canada used over 3,739 PJ of energy – the equivalent of more than 34 million homes' energy use in a year!



Over **160** Canadian industrial, commercial and institutional facilities are [ISO 50001](#)-certified. These companies improved energy performance by nearly 10% on average within two years.

Information and tools for industry via the [Canadian Industry Partnership for Energy Conservation \(CIPEC\)](#) and [Dollars to \\$ense](#) training. Since 1997, over **30,000** Canadian workers have completed in-class or on-line training.

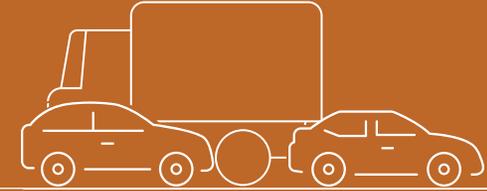
Co-funded projects in **19** industrial facilities through the [Industrial Energy Management Program](#) to implement energy management systems and studies.

## ACTION IN FOCUS



The \$2 billion [Low Carbon Economy Fund](#) continued to leverage investments in projects that generate clean growth and reduce GHG emissions. For example, in June 2019, the Government of Yukon received up to \$31 million for energy efficiency programs to retrofit residential, commercial, institutional and industrial buildings.

# Transportation & alternative fuels



## What's the problem?

Transportation is a fundamental component of the Canadian economy and society – moving goods and people and connecting communities. Yet, it is the second largest source of GHG emissions in Canada, accounting for 25%. Fossil fuels continue to dominate Canada's energy consumption, with transportation fuels accounting for over 80% of petroleum products sold in Canada.

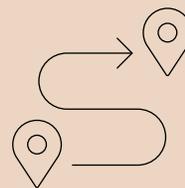
## What's our opportunity?

We can accelerate emissions reductions while continuing to enable the essential services provided by an effective transportation system. This can be achieved through zero-emission technologies, promoting more fuel-efficient technologies and practices, switching to cleaner fuels, and positioning Canada to take advantage of the growing global market for low-carbon fuels. The production and use of clean fuels represents a significant opportunity for Canada, as an energy nation, to compete and thrive in the low-carbon economy of the future, retaining and growing jobs and expertise while ensuring it remains an energy supplier of choice.

## What we're doing now

- **Codes and standards** aligned with the United States to support fuel switching, promote energy efficiency and accelerate decarbonization in this sector.
- **Accelerating electric vehicle (EV) and alternative fuel infrastructure** through deployment across the national highway system, along key freight corridors, in urban centres, and where Canadians live, work, and play, as well as RD&D to support the next generation of innovative technologies
- **Awareness and education** to provide consumers with the information and tools required to make more fuel-efficient and lower carbon vehicle purchasing decisions
  - EnerGuide label and the *Fuel Consumption Guide* to share and compare information on fuel consumption, emissions and potential costs
  - Zero-emission Vehicle Awareness Initiative to support greater consumer adoption of ZEVs
- **Benchmarking, training and tools for green freight** to help medium- and heavy-duty fleets reduce fuel consumption and save on fuel costs through programs such as the international SmartWay Transport Partnership
- **A hydrogen strategy for Canada** will guide us in positioning Canada as a world-leading producer, user and exporter of clean hydrogen and associated technologies. This complements Canada's advantage in other low-carbon fuels such as ethanol, renewable diesel and renewable natural gas.

## What still needs to be done



Wider adoption of electrification, clean fuels and energy-saving practices will continue to be important as we advance new measures to increase the supply of, and demand for, zero-emission vehicles in Canada.

Canada has the resources and expertise to be a leading producer and consumer of clean, non-emitting fuels. We must continue to position Canada to become a supplier of choice to the world for clean hydrogen, as well as the technologies and services to use it.

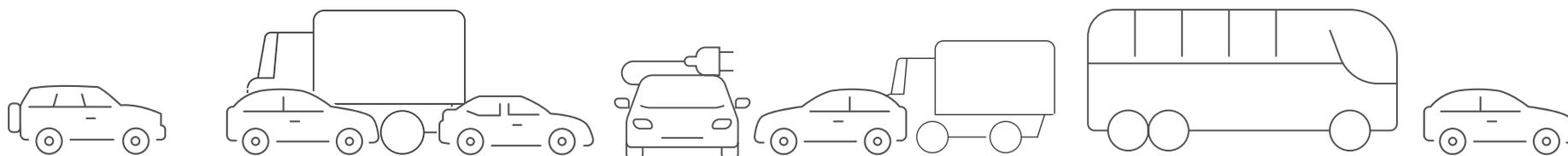
# Actions in 2019–2020

More than **1,000** medium- and heavy-duty truck assessments and over **1,300** fuel-saving retrofits were supported by the [Green Freight Assessment Program](#).

**377** new EV fast chargers, **7** natural gas and **2** hydrogen stations opened to the public, while 460 chargers, 14 natural gas and 6 hydrogen stations are under construction, funded by the [Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative \(EVAFIDI\)](#) launched in 2016.

Released **3** foundational reports on the hydrogen opportunity, setting the scene to develop a [hydrogen strategy for Canada](#) and worked with countries around the world through the [International Partnership for Hydrogen in the Economy \(IPHE\)](#), the [International Energy Agency](#) and the [Japan Hydrogen Energy Ministerial](#)

Over **48,000** Canadian trucks were benchmarked under the [SmartWay Transport Partnership program](#), representing **\$169 million** in fuel savings.



**\$130 million** provided for the [Zero Emission Vehicle Infrastructure Program](#), launched in 2019, to support EV charging and hydrogen refuelling stations where Canadians live, work and play, such as multi-unit residential buildings, workplaces and street parking.

Continued development of new [fuel efficiency standards for replacement tires](#) and support for the development and revision of more than **25** bi-national codes, standards and best practices for low-carbon vehicles and refuelling infrastructure

Released the [Natural Gas Use in the Medium and Heavy-Duty Vehicle Transportation Sector: Roadmap 2.0](#), building on the 2010 Roadmap, with updated information on natural gas supply, renewable natural gas, technical advancements and Canadian natural gas fleet success stories

## ACTION IN FOCUS

In 2019, the Government of Canada set ambitious targets for zero-emission vehicles (ZEV) to reach 30% of new light-duty vehicles sales per year by 2030 and 100% by 2040. We are delivering a suite of new initiatives designed to increase awareness, availability and use of lower carbon transportation options. The [Zero-Emission Vehicle Awareness Initiative](#) supports projects to increase awareness of ZEVs, public charging and infrastructure refuelling infrastructure activities, ultimately supporting greater adoption of ZEVs by Canadians. The [Incentives for Zero-Emission Vehicles \(iZEV\)](#) program is providing point-of-sale incentives for consumers who buy or lease an eligible vehicle.

# Leading by example



## What's the problem?

Though the federal government is responsible for less than 1% of Canada's GHG emissions, we have a responsibility to lead by example. The Government of Canada owns and manages the largest fixed-asset portfolio in the country, with 32,000 buildings and 30,000 vehicles. We need to ensure federal operations reflect Canada's ambition and convene and collaborate with domestic and international partners to move the country closer to net-zero emissions.

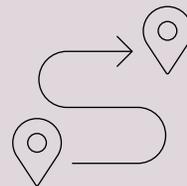
## What's our opportunity?

Through strong partnerships and the promotion of energy efficiency and innovative technologies – including within our own assets – the federal government can contribute to Canada's resilience and competitiveness in a low-carbon global economy.

## What we're doing now

- Through the 2017 **Greening Government Strategy**, the Government of Canada committed to reduce its emissions from real property and administrative fleet 40% by 2030 and 80% by 2050.
  - Ensuring new federal buildings and all major building retrofits are low-carbon
  - Optimizing federal fleet management by adopting low-carbon mobility solutions and supporting infrastructure to modernize fleets
- **Fostering partnerships at home:** for example, through the continued implementation of *Build Smart – Canada's Buildings Strategy*, in partnership with the provinces and territories, to advance areas of shared interest including new buildings, retrofits, equipment and energy use data
- **International leadership** through involvement in energy efficiency initiatives under the International Energy Agency, the G20, the Energy Efficiency Hub, the Clean Energy Ministerial, the United Nations and other bilateral and multilateral partnerships

## What still needs to be done



An updated Greening Government Strategy in 2020 will raise the ambition of federal efforts. We can leverage the government's purchasing power to support green procurement and emerging clean technologies, such as technologies to reduce emissions in federal buildings and to reduce embodied carbon in construction materials. Canada is well-positioned to be among the leaders in a green global economy. Continued and strengthened international and domestic partnerships are essential for accelerating uptake of energy efficiency measures and the transition to a clean energy future at home and abroad.

# Actions in 2019–2020

Natural Resources Canada (NRCan) provided technical support to **43** GHG reduction and energy-saving facility projects through the [Greening Government Services program](#) to help other federal organizations reduce their operations' GHG emissions and energy use.

Canada joined the IEA's [User-Centred Energy Systems Technology Collaboration Programme \(Users TCP\)](#) to understand the role of energy users in accelerating the energy transition. Canada also renewed its support for the [UN Global Alliance for Building and Construction](#).



Canada hosted the [Clean Energy Ministerial \(CEM10\)](#) and [Mission Innovation \(MI4\) Ministerial](#) in May 2019, bringing together clean energy advocates and leaders representing over **25** countries and providing a platform to highlight the importance of a diverse and inclusive transition to a clean energy future.

In March 2020, over **80** experts from across Canada and the European Union member states participated in a two-day workshop on building efficiency, hosted in Ottawa under the [Canada-EU High Level Energy Dialogue](#). They discussed preparing the workforce for the energy transition, data analysis, creating energy smart cities and the role of local governments, among other topics.



**11%** of eligible federal light-duty fleet vehicle purchases were zero-emission vehicles or electric hybrid vehicles, bringing the total in the federal fleet to **748**. Canada's [Greening Government Operations for Fleets Program](#) helps federal fleet managers reduce environmental impacts and operating costs through right-sizing analyses and low-carbon replacement assessments.

Canada chaired the G20 International Partnership for Energy Efficiency's (IPEEC) Executive Committee and helped establish the [International Energy Efficiency Hub \(EE Hub\)](#), a new international collaboration platform to succeed IPEEC.

At CEM10/MI4, Canada launched the new [CEM Hydrogen Initiative](#), co-led by Japan and joined by **20** other countries. We also participated in [CEM's Electric Vehicle, Energy Management and Super-Efficient Equipment & Appliance Deployment initiatives](#); and [MI's Sustainable Biofuels Innovation Challenge](#) and [Affordable Heating and Cooling of Buildings Innovation Challenge](#).

**ACTION  
IN FOCUS**

**Canada**  
National Defence

As the largest federal user of energy, the [Department of National Defence \(DND\)](#) has implemented measures such as dedicated energy managers at defence installations, EnerGuide assessments and energy retrofits. Thirty-three percent of the DND's light-duty commercial vehicle fleet now runs on hybrid, plug-in hybrid or electric technology. The DND has also implemented 13 energy efficiency projects that will result in over \$30 million in estimated annual energy savings. As of March 31, 2020, this had resulted in a 31% reduction in GHG emissions in the DND's buildings and commercial vehicle fleet compared to 2005.

# Looking to the future

In early 2020, Canada and the world faced an unprecedented challenge as we moved to contain the COVID-19 pandemic and limit its economic impact. As we continue to address these challenges of today, we must also work toward a better future and develop a path to net-zero emissions by 2050. Driving energy efficiency is a key component of the Government of Canada's plan to build a strong and more resilient Canada.



# Annex 1.

## *Energy Efficiency Regulations*

### Administration

On June 12, 2019, NRCan published two amendments to the *Energy Efficiency Regulations*:

- **Amendment 15 to the *Energy Efficiency Regulations*** introduced or updated the energy efficiency standards for 11 product categories. Some affected products include residential electric furnaces, gas boilers, oil boilers and tankless water heaters, and commercial gas boilers, oil boilers, electric water heaters, and gas and oil water heaters.
- **Amendment 16 to the *Energy Efficiency Regulations*** introduced or updated the energy efficiency standards for eight product categories. Some of the affected products include residential air conditioners, heat pumps and ceiling fans, commercial and industrial chillers, pumps, and walk-in coolers and freezers.
- In December 2019, these regulatory amendments came into force.

### Enforcement

As of March 31, 2020, there were **73 differentiated products** in the Regulations.

To monitor compliance with the Regulations, NRCan collects data from energy efficiency reports submitted by dealers before a product enters the market and from import documents provided to the Canada Border Services Agency at the time of importation.

Between April 1, 2019, and March 31, 2020, NRCan processed almost 2.7 million records relating to the importation of regulated energy-using products to Canada. More than 10.9 million new or revised model numbers were submitted to NRCan for entry into the department's equipment database from dealers' energy efficiency reports.

# Annex 2.

## Energy Efficiency Regulations – Stringency comparison

The *Energy Efficiency Act* requires that once every three years, “the Minister shall demonstrate the extent to which the energy efficiency standards prescribed under this Act are as stringent as comparable standards established by a province, the United Mexican States, the United States of America or a state of the United States of America.” This analysis was last conducted for the 2016–2017 period and reported in the 2016–2017 Report to Parliament under the *Energy Efficiency Act*.

To address this requirement, an internal analysis evaluated the minimum energy performance standards for several jurisdictions. The standards were reviewed for Canada’s federally regulated products as of March 31, 2020, and comparable national standards in the United States and Mexico, and provincial standards in British Columbia, Ontario, Quebec, Manitoba, Nova Scotia and New Brunswick. Canadian federal requirements for energy efficiency standards apply to products imported into Canada or shipped between provinces. Provincial authority applies to products sold in the province.

**Table 1. Comparison of the stringency of Canada’s standards, as of March 31, 2020**

The number of standards meeting each criteria is shown.

	U.S.	Mexico	B.C.	Ont.	Que.	Man.	N.S.	N.B.
Canada’s standards are equivalent.	42 ▲	12 ▲	11 ▲	46 ▲	42 ▲	0 ▼	14 ■	19 ▲
Canada’s standards are more stringent.	6 ▲	4 ▼	7 ■	6 ▲	1 ▼	2 ▲	19 ▲	18 ▲
Canada’s standards are less stringent.	3 ▼	1 ▼	3 ▲	4 ▼	1 ▲	0 ▲	1 ▼	2 ■
<b>Total standards available for comparison</b>	<b>51</b>	<b>17</b>	<b>21</b>	<b>56</b>	<b>44</b>	<b>2</b>	<b>34</b>	<b>39</b>
Percentage of Canadian standards at least as stringent as comparable standards	94% ▲	94% ▲	86% ▼	93% ▲	98% ▲	100% ▲	97% ▲	95% ▲

**Changes since last measured (2016–2017)**

▲▼ Indicates improvement  
(more standards are now equivalent or more stringent than a given jurisdiction)

▲▼ Indicates slippage  
(fewer standards are more stringent than a given jurisdiction)

■ No change

Since the 2016–2017 period, the proportion of energy efficiency standards in Canada that are **at least as stringent** as comparable standards in the United States of America and Mexico has **increased**.

Canada now has **more** energy efficiency standards that are **equivalent** to those in other jurisdictions and **fewer** that are **less stringent**.

British Columbia leads the nation in energy efficiency standards. Compared to 2016–2017, there are now **more federal standards** that are considered **less stringent** than those enacted in British Columbia. More action is needed to close this gap.

# References

International Energy Agency, 2018. Insights Series: Energy Efficiency Potential in Canada to 2050. <https://www.iea.org/news/canadian-energy-system-has-significant-untapped-efficiency-savings>

Government of Canada, 2020. A Healthy Environment and a Healthy Economy: Canada's strengthened climate plan to create jobs and support people, communities and the planet. <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview.html> (Accessed December 2020)

Natural Resources Canada, Greenhouse Gas Equivalencies Calculator. <https://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/calculator/ghg-calculator.cfm> (Accessed December 2020)

Natural Resources Canada, 2020. Energy Efficiency Trends in Canada 2000–2018. [https://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/data\\_e/publications.cfm#a](https://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/data_e/publications.cfm#a)

ECO Canada, 2019. Energy Efficiency Employment in Canada. <https://www.eco.ca/research/report/energy-efficiency-canada/>

Government of Canada, 2016. Pan-Canadian Framework on Clean Growth and Climate Change. <https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework/climate-change-plan.html>

Natural Resources Canada, 2015. Maximizing Canada's Energy Advantage: Canadian Industrial Energy Efficiency, Energy and Mines Ministers' Conference. Halifax, Nova Scotia (July 2015). [https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/www/pdf/publications/emmc/15-0138\\_Industrial%20report\\_e\\_acc.pdf](https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/www/pdf/publications/emmc/15-0138_Industrial%20report_e_acc.pdf) (Accessed December 2020)

Natural Resources Canada, modified 2020–10–06. Petroleum Products Facts. <https://www.nrcan.gc.ca/science-data/data-analysis/energy-data-analysis/energy-facts/petroleum-products-facts/20065> (Accessed February 2021)

\*The Office of Energy Efficiency at NRCan has changed the base year related to its NEUD from 1990 to 2000, beginning with the release of 2018 data. This rebasing is to ensure that the NEUD reflects developments in trends and structures of Canada's energy end use and efficiency across sectors. It also synchronizes Canada's energy use data reporting with changes recently made by the International Energy Agency. While new estimates are no longer made available for years prior to 2000, data with the new base year are expected to better service the development, implementation and monitoring of government policies, programs and projects; evidence-based decision-making; industrial and market analysis and projection; and energy use literacy, education and stakeholder engagement.

