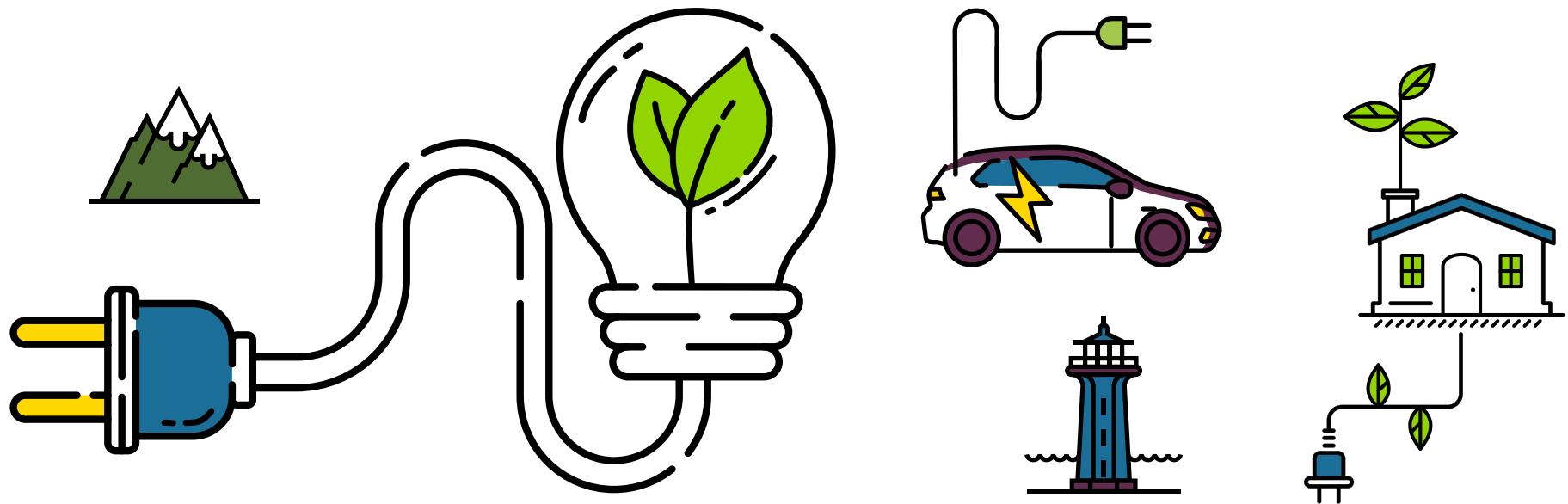




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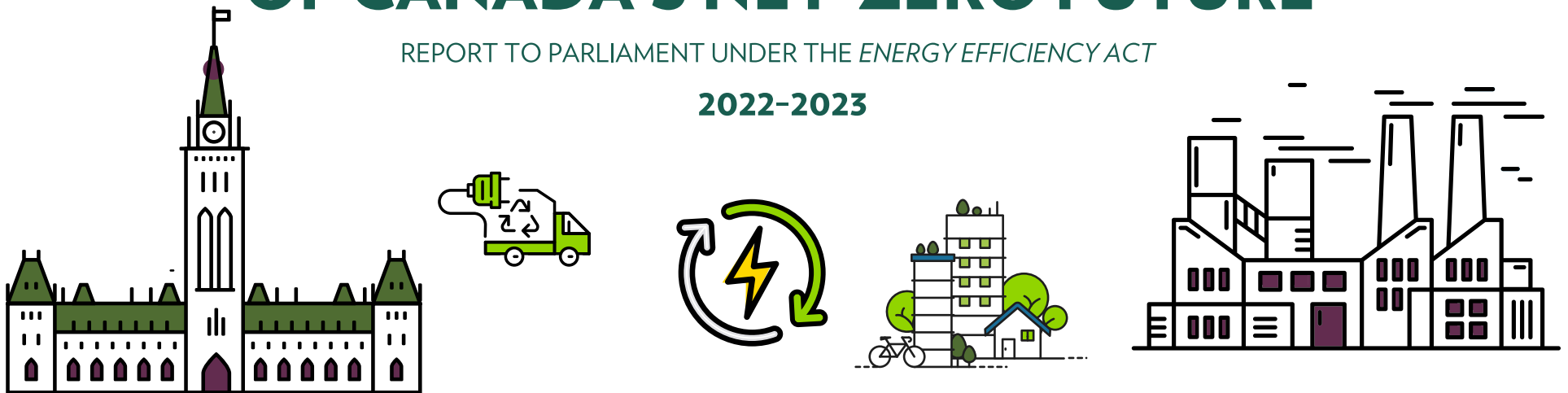
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ENERGY EFFICIENCY: AN ESSENTIAL PART OF CANADA'S NET-ZERO FUTURE

REPORT TO PARLIAMENT UNDER THE *ENERGY EFFICIENCY ACT*

2022-2023



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Aussi disponible en français sous le titre : Efficacité énergétique : Un élément essentiel de l'avenir carboneutre du Canada
Rapport au Parlement en vertu de la Loi sur l'efficacité énergétique 2022-2023

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Cat. No. M141-15E-PDF

ISSN 2562-1408

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MESSAGE FROM THE MINISTER OF ENERGY AND NATURAL RESOURCES



Canada is at a pivotal moment. As we face economic and environmental challenges at home and around the world, the federal government has a responsibility to deliver results Canadians can count on. That means growing a competitive, resilient economy while ensuring energy is reliable, affordable and sustainable.

Improving energy efficiency is central to this effort. It reduces costs for households, strengthens business competitiveness, creates good jobs

and lowers emissions, all while making our homes, buildings and communities more resilient to extreme weather.

Canada has long led the way in energy efficiency. From standards and regulations to capacity-building and incentives, we've partnered across jurisdictions and sectors to drive practical results. This report outlines federal actions in 2022–23 to support the development and adoption of energy-efficient technologies and practices that lower energy bills and grow the economy in every region.

While energy demand continues to rise, efficiency gains are delivering real benefits. Between 2000 and 2021, Canada improved energy efficiency by 13 percent, cutting what would have been a 21 percent increase in energy use nearly in half. That translated into \$27 billion in energy cost savings in 2021 alone for households, businesses and industry.

Natural Resources Canada (NRCan) is helping to lead by example by greening federal operations through electrification of vehicle fleets, net-zero retrofits and new builds, and low-carbon procurement practices that support Canadian innovators.

For Canadians, energy efficiency means more affordable, comfortable homes. In 2022–23, NRCan advanced initiatives like the Canada Greener Homes Initiative, which includes both grants and loans to support energy-saving retrofits. New programs like the Codes Acceleration Fund and Deep Retrofit Accelerator Initiative are helping provinces, territories and the private sector adopt high-performance building codes and retrofit large buildings. At the same time, programs like the Oil to Heat Pump Affordability program, the Low Carbon Economy Fund and ENERGY STAR® for New Homes are delivering direct benefits to Canadians.

In the industrial sector, NRCan is working alongside industry to address barriers and help businesses become more efficient and competitive. Programs like the Green Industrial Facilities and Manufacturing Program, ENERGY STAR® for Industry and 50001 Ready Canada are making a difference. We're also partnering with the Canada Infrastructure Bank to invest in large-scale energy efficiency projects that support economic and environmental goals.

Strong regulations are a key part of the toolkit. In 2022–23, we continued to update and implement policies that improve efficiency, lower emissions and reduce costs, while also ensuring fair and consistent standards for Canadian manufacturers and importers.



MESSAGE FROM THE MINISTER OF ENERGY AND NATURAL RESOURCES

And we're building momentum in clean fuels and electrification by expanding EV charging infrastructure, supporting EV battery production and backing clean fuel strategies that cut costs, create jobs and strengthen Canada's energy security.

Our progress is rooted in partnership — with provinces and territories, Indigenous communities, municipalities and industry. By working together, we are advancing energy efficiency across the economy and making real change on the ground.

As we continue this work, our focus remains clear: deliver practical solutions, build on Canada's strengths and make life more affordable while leaving no one behind.

The Honourable Tim Hodgson
Minister of Energy and Natural Resources





ENERGY EFFICIENCY – SUPPORTING A CLEANER FUTURE

Energy efficiency is a powerhouse for delivering energy savings, reducing greenhouse gas (GHG) emissions, and improving affordability for Canadians. However, Canada's energy consumption remains high. Advancing innovation in the fields of housing, buildings, communities, industry, and transportation can take advantage of the benefits of energy efficiency, such as lowering energy costs, cutting emissions, improving operating performance, and increasing asset values.



The Government of Canada continues to support Canadians in reducing their energy consumption through decarbonization actions. The purpose of this report is to highlight actions in the following sectors:



Across the government (pgs. 2 to 4): Leading by example to transition to net-zero carbon and climate-resilient operations, ensuring Canada is a leader in green government operations.



Homes and Buildings (pgs. 5 to 13): Supporting energy efficient new construction and high-performance retrofits of existing homes and buildings, including by transforming the way we heat space and water to make housing more affordable and comfortable.



Industry (pgs. 14 to 17): Improving industrial efficiency by accelerating the uptake of energy efficiency and energy management solutions in industrial and manufacturing facilities, helping Canadian industry maximize energy performance, reduce GHG emissions, and increase competitiveness for industry.



Clean Fuels (pgs. 18 to 20): Pursuing clean power and clean fuels to achieve emissions reductions in personal transportation, the built environment, and hard-to-decarbonize sectors including industry and medium- and heavy-duty freight.



Regulations and Enforcement (pgs. 21 to 24): Developing more flexible and effective regulations and legislation while reducing barriers to the trade of energy-using equipment and launching new amendments that are expected to achieve more energy and GHG emissions savings.





ACHIEVING NET ZERO

The Government is leading the way on energy efficiency by leveraging its purchasing power to model and encourage energy efficient operations and pursuing carbon neutral alternatives to existing infrastructure.

The Government is also building partnerships at home and abroad to position Canada as a leader in the transition to a net-zero future.

Transforming challenges into opportunities for growth

Canada is accelerating the move toward net-zero by greening Government of Canada operations and working with partners to green their government operations.

The Greening Government Strategy outlines specific measures to ensure responsible internal operations. Environmental impacts will be considered in the procurement of goods and services, with priority given to light-duty on-road vehicles, low carbon fuels, construction materials, and electricity.

ENERGY EFFICIENCY ACTIONS THAT WILL GET US THERE:

- Maintaining a **net-zero climate-resilient real property portfolio plan**.
- Supporting the **implementation of a Green Procurement Standard**, and related guidance.
- Increasing **support for energy efficiency project implementation** across federal departments.
- **Reducing GHG emissions by purchasing ZEVs** for on-road fleets and low-carbon intensity fuels for air and marine fleets.





GREENING GOVERNMENT

Buyers for Climate Action

In June 2022, the Government of Canada announced **Buyers for Climate Action**, a collaborative initiative aimed at achieving common environmental goals through the advancement of green procurement practices. Collaborating on green procurement practices supports Canada's transition to a greener economy and sends a strong signal to the market of increased demand for low-carbon and climate-resilient goods and services, and clean technologies.

Defence Energy & Environment Strategy

The Department of National Defence made progress on the **Defence Energy and Environment Strategy**:

- 35.7% reduction in GHG emissions from buildings and commercial light-duty vehicles relative to a 2005 baseline.
- 86% of newly purchased commercial light-duty vehicles were ZEVs or Hybrid, and 29% of total vehicle purchases were ZEVs.
- 72% of electricity consumed across the Department's carbon intensive grids is clean electricity.

Greening Government Fund

Since its inception in 2019, the **Greening Government Fund** has invested more than \$55 million to support 77 projects in 18 federal departments and agencies to help reduce GHG emissions from operations. Departments contribute to the Greening Government Fund based on their air travel emissions.

Energy Efficiency in Fleet

Greening Government initiatives have helped to reduce GHG emissions from federal facilities and conventional fleets by 39.8% from 2005 to 2023. Energy efficiency measures have contributed to reducing 676 kilotons of GHG emissions from federal real property operations.

Global Affairs Canada achieved 78% ZEV or hybrid electric vehicle (HEV) with 100% of vehicle acquisitions in 2022-2023 being ZEV or HEV.





ENERGY EFFICIENCY GAINS ACROSS CANADA

PROGRESS TO DATE

Actions by players across the country have made tremendous strides in improving energy efficiency, yielding game-changing cost savings and GHG emission reductions. The energy efficiency sector, continues to grow as a key source of well paying jobs.



890 PJ

PJ energy saved – equivalent to the energy used by 9.7 million households (excluding transportation) in 2021



\$27.2 B

of avoided energy costs in 2021



48.5 Mt

of avoided emissions in 2021



13.5%

Canada has boosted its energy efficiency by 13.5% in 2021



466k

In 2023, six major industries employed nearly 466,000 energy efficiency workers, with \$22 billion in estimated employment income

Path Ahead

As we continue to address the challenges of today, we must work towards a better future and continue to 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.





ACHIEVING NET ZERO WHILE IMPROVING AFFORDABILITY: TRANSFORMING CHALLENGES INTO OPPORTUNITIES FOR GROWTH

Canada's buildings sector is the third largest source of GHG emissions.

Decarbonizing the buildings sector is a key component of Canada's pathway to 2030, and essential to achieving net-zero emissions by 2050. **Over 96% of buildings sector emissions come from space and water heating** due to the use of fossil fuel equipment such as natural gas furnaces and the extra energy needed to heat and cool buildings with insufficient envelope performance.

Decarbonizing the buildings sector will require better construction of new homes and buildings, the retrofit of existing buildings, and behavioural changes that reduce energy consumption. Canada is accelerating high-performance retrofits and net-zero new construction by embracing new technologies and low-carbon building materials to reduce costs and spur the retrofit market. We are also pursuing innovative financing models and developing the next generation of skilled energy efficiency workers to build, renovate, and operate high-performance buildings.



ENERGY EFFICIENCY ACTIONS THAT WILL GET US THERE:

- Improving energy performance standards to reduce energy costs for Canadians.
- Developing a national roadmap towards lowering emissions and improving affordability across Canada's built environment - the Canada Green Buildings Strategy.
- Working with provinces, territories, and other partners to support the adoption of the highest tier building codes, pilot community-scale retrofits, and facilitate deep energy retrofits for large buildings via the Deep Retrofit Accelerator Initiative.
- Supporting the accelerated adoption of the higher energy efficiency tiers of the 2020 National Model Codes through the Codes Acceleration Fund, while simultaneously supporting the development of the 2025 National Model Codes, which will include new requirements for GHG emissions, increased climate resilience, and requirements for alterations to existing buildings.
- Modernizing information tools that set the stage for retrofit action by benchmarking, labelling, and recognizing energy performance in homes and buildings through national tools such as EnerGuide and ENERGY STAR®.
- Launching a community-level net-zero homes initiative and piloting community-scale retrofits to help Canadians and businesses build capacity and make informed decisions.
- Supporting energy efficiency innovation in the residential sector by promoting new energy efficiency technologies and supporting Indigenous, rural and remote, and under-resourced communities in reducing emissions.
- Empowering communities to take climate action by expanding the Low Carbon Economy Fund to support projects from governments, schools, non-profits, Indigenous Peoples, and others to cut pollution and create jobs across the country.





THE CANADA GREENER HOMES INITIATIVE

GREENING OUR HOMES AND BUILDINGS

Canada Greener Homes Grant*

The [Canada Greener Homes Grant](#) helps Canadians make energy-efficient upgrades to their homes and save on their monthly energy bills.

From inception to March 31, 2023, over 302,000 applications were received and more than \$225 million in grants have been issued to over 57,300 homeowners across Canada, with an additional \$38 million in agreements signed directly with First Nations and Métis communities.

Canada Greener Homes Loan

In 2022, the Canada Mortgage and Housing Corporation (CMHC) launched the Canada Greener Homes Loan program. The program provides up to \$40K in interest-free financing with a repayment term of 10 years to support residential deep retrofits.

Green Municipal Fund

The Green Municipal Fund (GMF) is a unique mix of funding and training that leverages an endowment valued at just over \$1 billion from the Government of Canada to give municipalities the tools they need to accelerate the transition to a low-carbon future. Administered by the Federation of Canadian Municipalities, the GMF committed \$121 million in loans and \$65 million in grants in 2022-23.

The GMF also established a new Strategic Plan for 2023-2026 that will see a greater focus on supporting net-zero targets, which will include full commitment of funding received in Budget 2019.

Canada Greener Homes Job Training

The [Canada Greener Homes Initiative](#) is supporting new green jobs. The Government of Canada has invested up to \$4 million to date to organizations supporting the recruitment, training, mentoring and upskilling of Energy Advisors.

As of April 2023, up to 1,700 participants have partaken in these efforts. The number of active Energy Advisors has increased month over month, from 948 in May 2021 to 1,635 as of April 2023 through actions taken by the private sector and our Government.

Oil to Heat Pump Affordability*

In 2022-23, the Canada Greener Homes Initiative was expanded to include the new [Oil to Heat Pump Affordability \(OHPA\) program](#).

Launched (for pre-registration) in February 2023, the program provides low-to-median income households with upfront funding to transition from oil to cold climate heat pumps. Making the shift from an oil furnace to an electric heat pump significantly reduces energy bills and Canada's emissions.

* Since the time of publication, progress on these initiatives has continued. Refer to the [Canada Greener Homes grant at a glance](#) and [Oil to Heat Pump Affordability program at a glance](#) to see current implementation statistics.





ENERGY EFFICIENCY ACTIONS IN 2022-2023



ENERGY EFFICIENCY IN ACTION – THE IMPACT

In 2022-23, the Green Municipal Fund's Sustainable Affordable Housing initiative approved funding over \$53 million in grants and loans for 61 projects, including:

- The development or construction of 3908 affordable housing units Canada wide that will avoid ~3,000 tons of GHG emissions.
- \$3.2 million in the Valemont Senior Citizens Housing Society's construction of a net-zero energy 18-unit independent living facility in the rural town of Valemont, British Columbia, the first northern net-zero project supported by the GMF.
- \$2 million to support Roedean Co-operative Homes Inc. in the retrofit of a 5-storey, 100 unit building in Oakville, Ontario, reducing energy use and extending the life of the building by at least 20 years.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

GREENING OUR HOMES AND BUILDINGS

The Green and Inclusive Community Buildings (GICB) program seeks to improve the places Canadians live and gather by cutting pollution, making life more affordable, and supporting thousands of good jobs.

Journey in the Heart of the Homeland Manitoba Métis Federation, Winnipeg, MB

The Government of Canada is investing over \$23 million to repurpose the historic Bank of Montreal building in Winnipeg, Manitoba, into a new Metis Nation Heritage Centre. The project will increase the building's accessibility, carbon reduction, energy efficiency, resilience, and durability.

Resilience Montreal, Montreal, QC

Resilience Montreal is a community-led project that offers support to individuals experiencing homelessness, particularly the Indigenous population. Infrastructure Canada is investing \$3.8 million to renovate and upgrade the Resilience Montreal building to reduce its energy consumption and GHG emissions.

The renovation will see the facility become more energy efficient and reduce the building's GHG emissions by 93%. Once upgrades are completed, Resilience Montreal will be able to accommodate up to 150 people experiencing homelessness.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

INCREASING CAPACITY IN THE BUILDING SECTOR

Building and Industry

Existing Building Commissioning (EBCx)

(EBCx) focuses on improving or optimizing the performance of existing equipment and systems and identifying low-cost or no-cost operational improvements that reduce the building's energy consumption and support current facility energy needs. Since its inception in 2021, 20 new case studies have been published on NRCan's website to support building operators on their energy efficiency journey.

Energy Efficient Buildings Research, Development and Demonstration Program

As of 2022-23, the \$42.3 million Green Infrastructure: **Energy-Efficient Buildings Research, Development and Demonstration Program** has supported 20 projects that will accelerate the development and adoption of net-zero, energy-ready codes and cleaner technologies. This will promote energy-efficient building design and construction practices, provide cost-effective building solutions, and validate applications with real-world demonstrations. Projects announced in 2022-23 include **\$1.8 million to the Toronto Community Housing Corporation** to transform a poorly performing 80-year-old mid-rise multi-unit residential building into a high-performing building with enhanced indoor air quality, establishing an innovative and replicable model.

Local Energy Efficiency Partnerships

The Local Energy Efficiency Partnerships (LEEP) initiative continued to foster the construction industry's capacity and confidence in net-zero, energy-ready technologies and the adoption of the new tiered building code. In 2022-23, the LEEP team delivered its first provincial roll-out of **LEEP for Renovations in British Columbia**.

Greener Neighbourhoods Pilot Program

In 2022-23, the Government of Canada launched the **Greener Neighbourhoods Pilot Program**. The Program is investing \$35.5 million over five years to pilot the Dutch Energiesprong model of aggregated deep energy retrofits in up to six community housing neighbourhoods in Canada. The Program aims to decrease energy consumption and GHG emissions while reducing the cost and time for installation by retrofitting similar homes and buildings in an entire neighbourhood as a single project.

Product Certification

In 2022-23, the National Research Council added code evaluations of 17 new construction products that improve energy efficiency in buildings to the Construction Materials Centre's **online registry**, helping them gain market access in Canada.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

CREATING BETTER CODES AND STANDARDS

Codes Acceleration Fund

In 2023, the Government of Canada launched the **Codes Acceleration Fund (CAF)**. CAF supports projects that accelerate the adoption of and compliance with the higher-performance tiers. These were outlined in the 2020 edition of the National Building Code, National Energy Code of Canada for Buildings or other high-performance codes, including net-zero emissions codes. CAF promotes higher rates of compliance with adopted codes, builds capacity, and supports market preparedness for ambitious codes adoption.

Deep Retrofit Accelerator Initiative

In 2023, the Government of Canada launched a new \$200-million initiative aimed at accelerating deep retrofits in buildings. **The Deep Retrofit Accelerator Initiative (DRAI)** provides funding to organizations known as “retrofit accelerators”. These organizations convene and coordinate retrofit actors, support building owners through the deep retrofit process, and drive market transformation in a given region or market segment. DRAI addresses barriers to deep retrofit projects, facilitates the development of deep retrofit projects, and contributes to transforming the buildings sector in support of Canada’s climate goals.

Home EnerGuide Rating System

The EnergyGuide Rating System (ERS) is a national energy rating system that provides a framework and tools for conducting a detailed assessment of home energy use for new and existing residential buildings. Over 55 partners across Canada including provinces, territories, municipalities, and utilities use ERS as the basis for incentive programs, code compliance, and standards for new housing. EnerGuide database contains more than 3.9 million evaluations completed across Canada.

3.9M

Total number of evaluations completed across Canada in the EnerGuide database.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

BUILDING BETTER HOMES

Apartment Construction Loan Program

CMHC's \$40.75 billion **Apartment Construction Loan Program** (previously Rental Construction Financing initiative) is designed to support rental housing construction projects across Canada by providing low-cost insured loans to developers, non-profit housing providers, and municipalities in places where there is a need for more rental housing units. The initiative focuses on standard rental apartment projects in Canada where there is a need for more rental housing supply. To be eligible, projects must achieve a minimum decrease of 15% in energy use and GHG emissions relative to the 2015 national building and energy codes.

Green & Inclusive Community Building Program

In April 2021, Canada launched the **Green and Inclusive Community Buildings (GICB) program**. In fiscal year 2022-23, 75 community infrastructure projects (retrofits and new builds) were approved and announced under the GICB. New net-zero buildings include long-term care facilities benefiting Indigenous communities, community and recreational facilities, and cultural hubs in underserved and high-needs communities across Canada.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

ACCELERATING THE DEVELOPMENT & ADOPTION OF CLEAN TECHNOLOGY

The ENERGY STAR® program supports the accelerated development and adoption of clean technology to build a more resilient economy and transition to net-zero by 2050.

ENERGY STAR for New Homes

ENERGY STAR® for New Homes is a voluntary labeling program for new houses targeting energy efficiency improvement approximately 20% higher than building codes.

Over 3,500 new homes were ENERGY STAR® certified in 2022-2023, resulting in over 400,000 GJs saved.

ENERGY STAR for Products

The **ENERGY STAR for Products** program encourages and promotes consumer purchases of high-efficiency products.

In 2022-2023, the program achieved an estimated 32.98 PJs of cumulative annual energy savings (about 3.48 Mt of GHG emissions avoided). This is equivalent to the energy consumed by 680,394 passenger vehicles in a year.

ENERGY STAR for Buildings

Over 184 buildings were certified in fiscal year 2022-23 through the ENERGY STAR® Certification Program for existing commercial and institutional buildings. The Program recognizes high-efficiency performance.

ENERGY STAR Award

Natural Resources Canada congratulates **17 organizations and 10 buildings** for winning the 2022 ENERGY STAR® Canada Awards for advancing energy efficiency.

The awards recognize organizations that have demonstrated excellence in offering Canadians the most energy-efficient products and technologies available on the market.

ENERGY STAR Portfolio Manager

ENERGY STAR® Portfolio Manager® is a free online platform that allows building owners and operators to monitor, track, and report on energy use. In 2022, over 42,000 buildings were inputted into the ENERGY STAR® Portfolio Manager® tool.

ENERGY STAR® Portfolio Manager® web services were adopted by Hydro Quebec and Énergir.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

CANADA GREEN BUILDINGS STRATEGY

A key component of the 2030 Emissions Reduction Plan is the development of the Canada Green Buildings Strategy (CGBS). **Budget 2022 committed \$150 million** to develop the CGBS and advance the Government's vision **for greener, more sustainable, resilient, and energy efficient homes and buildings** to continue to make progress towards net-zero by 2050 climate goals.

In 2022-23, NRCan realized the following milestones related to the CGBS:

- Released a [Discussion Paper](#) to help guide public engagement. Six key themes were covered: leading by example, mandating change, enabling investment decisions, growing Canada's advantage, training and incentivizing the future workforce, and enabling informed actions.
- Developed an evidence base and identified actions with key partners.
- Engaged Canadians via an online portal.
- Conducted outreach and convened meetings to hear perspectives from Indigenous partners.
- Published summaries of what was shared by Canadians, Indigenous partners, and buildings sector stakeholders.





ACHIEVING NET ZERO

Canada is helping industries adopt clean technology and transition to net-zero emissions. Improving industrial energy efficiency will help companies reduce energy use and GHG emissions, while improving productivity and growth – securing Canada's clean industrial advantage.

Transforming challenges into opportunities for growth

Adopting energy efficient practices has proven to reduce industrial energy use and GHG emissions. This in turn lowers industrial operating costs, improves competitiveness, creates jobs, and supports a post-pandemic economic recovery and the transition to a low-carbon economy.

Energy management practices (how an organization understands, reduces and adapts energy use) can help industrial organizations meet increasingly stringent regulatory requirements. These practices also generate cost savings that can be reinvested in other GHG emission reduction activities, such as electrification and switching to clean fuels.

ENERGY EFFICIENCY ACTIONS THAT WILL GET US THERE:

- **Improving industrial energy efficiency** by accelerating the uptake of energy management systems and projects in facilities and processes supported by funding industrial incentives.
- **Generating a knowledge base and building capacity** through information sharing, including compliance tools and partner engagement.
- **Delivering historic investments** to enable cleaner and more competitive industries.





ENERGY EFFICIENCY IN ACTION – THE IMPACT

Green Industrial Facilities and Manufacturing Program (GIFMP)

Launched in February 2023, the **GIFMP** provides financial assistance to industrial facilities to help them maximize energy efficiency and reduce operational emissions.

The GIFMP supports various activities, including hiring and training energy management practitioners, and energy assessments and audits. It also supports the implementation of energy management systems, and capital investments, such as upgrades to facility processes and infrastructure.

By creating products with cleaner and more efficient processes, Canadian industry can reduce costs and pollution, improve competitiveness, and create jobs for future generations.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

Canadian Industrial Partnership for Energy Conservation (CIPEC)

CIPEC is a long-established partnership between the Government of Canada and Canadian industry to promote innovative energy management solutions. It provides capacity-building to increase energy awareness and encourages industrial sector action.

As part of its mandate to advance greater energy efficiency in the industrial sector, CIPEC promoted Energy Efficiency Practices and tools, the newly launched Green Industrial Facilities and Manufacturing Program, information webinars in both official languages, and presentations at industry conferences.

ISO 50001 and 50001 Ready Canada

The ISO 50001 energy management system provides a framework for organizations to systematically track, analyze, and improve energy efficiency.

Launched in 2022, the 50001 Ready Canada program provides industrial facilities, commercial and institutional buildings, as well as medium and high-rise multi-unit residential buildings with self-paced guidance to use the ISO 50001 energy management standard. 50001 Ready Canada recognizes organizations that self-attest to completing the 25 compliance steps by issuing a 50001 Ready certificate, acknowledging achievement in an online registry, and profiling energy efficiency improvement in communication products. To date, 229 industrial facilities have registered to use the 50001 Ready Navigator tool.

In 2022-23 ISO 50001 approved 11 projects for a total of \$1.4 million.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

ENERGY STAR for Industry

NRCan supports industrial energy improvements through the ENERGY STAR Challenge, which recognizes industrial facilities that achieve a 10% reduction in energy intensity within five years.

In Fiscal Year 2022-2023, 20 facilities registered for the ENERGY STAR for Industry Challenge, bringing the all-time programming total up to 53 participants, including five ENERGY STAR achievers. 11 facilities were certified as top energy efficiency performers under the ENERGY STAR for Industry certification, bringing the all-time programming total up to 64 certifications.

Clean Power: Green Infrastructure and Public Transit Sector

Under its Clean Power, Green Infrastructure and Public Transit sector, the Canada Infrastructure Bank (CIB) invests in several types of projects that support Canada's clean growth economy and reduce GHG emissions – these include clean power generation, transmission, storage, district energy, carbon capture and storage, hydrogen, low carbon fuels, energy efficient retrofits, zero-emission charging and hydrogen refueling infrastructure, and zero emission buses. In Fiscal Year 2022-23, the CIB invested \$2.9 billion across 20 projects in these three sectors, with total estimated average GHG reductions of 1.6 Mt.

\$2.9B

Amount the CIB
invested across 20
projects in Clean
Power, Green
Infrastructure and
Public Transit sector
in Fiscal Year 2022-23





ACHIEVING NET ZERO

Clean fuels will enable deep GHG reductions, drive economic opportunities, help Canada's energy sector pivot toward low-carbon growth, and enhance Canada's energy security. Activities to promote the use of alternative energy sources – including clean fuels – are enabled under the *Energy Efficiency Act*.

Transforming challenges into opportunities for growth

Transportation accounts for a quarter of Canada's GHG emissions, of which the majority comes from the on-road sector, including light, medium, and heavy-duty vehicles. One way to reduce transportation-related GHG emissions is to replace vehicles powered by fossil fuels (internal combustion engines, or ICEs), with zero-emission vehicles (ZEVs). In doing so, it will be important to ensure that the life-cycle carbon footprint associated with producing, powering and recycling ZEVs (and their component parts, such as lithium-ion batteries) is lower than that of ICE vehicles. Clean fuels can further support

emissions reduction in other sectors, such as Canada's building sector and heavy industry, which account for a quarter of Canada's GHG emissions. Clean fuels such as biodiesel, ethanol, renewable natural gas and biochar provide low-carbon alternatives that prolong assets while providing immediate emissions reductions.

Recognizing the essential role of clean fuels, Canada's Strengthened Climate Plan includes broad economic policies, such as the Clean Fuel Regulation increases to the price on pollution, the Hydrogen Strategy for Canada, and investments to grow the clean fuels market.

ENERGY EFFICIENCY ACTIONS THAT WILL GET US THERE:

- **Making it easier for Canadians to switch to ZEVs** by investing in charging infrastructure, providing financial supports, and developing a regulated sales mandate.
- The 2030 Emissions Reduction Plan outlines Canada's commitment to develop a light duty ZEV sales mandate that will set annual targets. It is anticipated that **by 2035 100% of new passenger cars and light-trucks sold in Canada will be ZEV.**
- The development of an integrated strategy to reduce emissions from medium- and heavy-duty vehicles with the aim of reaching 35% of total sales being ZEVs by 2030, and eventually 100% by 2040 (where possible).
- **Positioning Canada as a leader** in electric vehicle battery manufacturing.
- The 2030 Emissions Reduction Plan outlines Canada's commitment to **exploring a bioenergy strategy** to optimize how Canada uses its agricultural, forestry, and municipal waste resources to generate net-zero energy in the medium and long term.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

ENHANCING REGULATIONS IN THE TRANSPORT SECTOR

Clean Fuels Regulations

The **Clean Fuel Regulations (CFR)** increase incentives for the development and adoption of clean fuels, technologies, and processes. The CFR requires gasoline and diesel suppliers to gradually reduce the carbon intensity from the fuels they produce and sell for use in Canada over time.

The CFR will deliver **up to 26 Mt of GHG emissions reductions in 2030**. This is equal to removing about two weeks' worth of GHG emissions from the Canadian economy.

Hydrogen

Joint declaration of intent between the Government of Canada and the Government of the Federal Republic of Germany on establishing a Canada-Germany Hydrogen Alliance was signed.

Aviation Climate Action Plan

In September 2022, the **2022-2030 Aviation Climate Action Plan** was released. It includes an ambitious sustainable aviation fuels (SAF) use target of 10% by 2030. Transport Canada continues to work with other government departments and the private sector to implement the Action Plan. This includes the identification of interim GHG reduction targets and the development of a SAF Blueprint, which will identify pathways to create a domestic market to support the 2030 target.

Emissions Reduction Fund

The **Emissions Reduction Fund (ERF)** Onshore Program provided up to \$170 million in repayable and partially-repayable funding to oil and gas companies who reduce or eliminate the intentional venting and flaring of methane-rich gas from their upstream operations. As part of the economic recovery of the oil and gas sector, the ERF-funded projects helped to preserve jobs while enabling significant methane emission reductions.





ENERGY EFFICIENCY ACTIONS IN 2022-2023

ZERO-EMISSIONS/ ELECTRIC VEHICLES

Through NRCan's **Zero-Emission Vehicle Awareness Initiative**, Canada invested \$6.3 million towards 31 projects that aim to increase awareness, knowledge, and public confidence in light-duty ZEVs and associated infrastructure. Additionally, NRCan invested \$3.4 million towards 15 projects that aim to increase knowledge, awareness, and confidence in medium- and heavy-duty zero-emission or low-emission vehicles among fleet owners, drivers and the general public.

The **Government of Canada launched new delivery organization intake model** for the Zero-Emission Vehicles Infrastructure Program—helping increase access to funding for smaller projects.

Light Duty Vehicles

Transport Canada helps make ZEVs more affordable through point-of sale incentives on the purchase/lease of both light and medium- and heavy-duty ZEVs, narrowing their purchase-price gap compared to internal combustion engine vehicles

Budget 2022 committed \$1.7 billion to expand the Incentives for Zero-Emission Vehicles Program to cover SUVs, vans, and pick-up trucks.

Between May 2019 and March 2023, over 200,000 vehicles were incentivized, helping Canada reach a light-duty zero-emission vehicle market share of 9.2% in 2023, increasing from 8.4% in 2022.

Budget 2022 committed \$547.5 million to launch the Incentives for medium- and heavy-duty Zero-Emission Vehicles Program. The Program offers up to \$200,000 toward the purchase/lease of eligible medium- and heavy-duty ZEVs for Canadian businesses.

As of March 31, 2023, over 350 vehicle purchases used the incentive, totaling over \$10 million.





ACHIEVING NET ZERO

Energy efficiency legislation and regulations reduce energy consumption and related GHG emissions in homes, commercial and institutional buildings, and the industrial sector by preventing inefficient equipment from crossing provincial and Canadian international borders for the purpose of sale or lease.

Energy efficient equipment benefits Canadians by reducing their energy bills, making energy needs more affordable, alleviating the burden of households experiencing energy poverty, and reducing businesses' operating costs. Regular amendments foster technological innovation by encouraging manufacturers to produce affordable high-efficiency equipment and maximize energy savings in support of achieving net-zero emissions by 2050.

Reduced electricity demand from regulated products also supports the energy transition by reducing peak loads and the need for utilities to add more generating, transmission, and distribution capacity.

Transforming challenges into opportunities for growth

Most of the energy demand in homes and buildings continues to be used for space and water heating. We continue undertaking studies to advance new regulations with more stringent energy efficiency standards for equipment and working with stakeholders and provinces and territories to support the transition to more energy efficient space and water heating technologies.

We are making the regulations more flexible and effective in reducing unnecessary barriers to trade of energy efficient equipment by harmonizing energy efficiency standards with trade partners but also in leading on setting more ambitious standards for specific products when it is technically and economically feasible and would assist with the Government's goal to reduce GHG emissions and achieve net-zero emissions by 2050.

ENERGY EFFICIENCY ACTIONS THAT WILL GET US THERE:

- **Published Amendment 17** in Canada Gazette Part II on December 7, 2022. It is estimated to result in a total cumulative energy consumption reduction of approximately 37.8 petajoules and GHG emission reductions of approximately 3.2 megatons of carbon dioxide equivalent by 2050.
- **Published the 2022-2024 Forward Regulatory Plan** including the consideration of space and water heating products in upcoming regulatory action.
- **Launched Amendment 18** that includes more products than Amendment 17 and it is also expected to achieve more energy and GHG emissions savings.
- **Continue to ensure compliance** with energy efficiency standards for regulated products.
- **Utilizing flexible regulatory tools** like Ministerial Regulations and Technical Standard Documents.
- **Continue improving how we assess and consult on Gender Based Analysis Plus (GBA Plus)** and Indigenous considerations.





CANADA ADVANCES ENERGY EFFICIENCY DOMESTICALLY AND GLOBALLY

International Policy

In June 2022, Canada supported the G7 Leaders Communiqué, signaling a commitment to accelerate the energy transition with efficiency as the “first fuel” of these efforts. It also committed to scale-up and de-risk investments and strengthen international collaboration on energy efficiency.

Canada engages with international partners through the multilateral groups such as the International Energy Agency’s 4E (Energy Efficiency End-use Equipment) technology collaboration program.

International Policy

Following the [Joint Statement between Canada and the U.S on the Nexus between Transportation and Climate Change](#), Canada and the U.S held the inaugural meeting of the Canada-US Zero-Emission Vehicle Taskforce in February 2023. The taskforce advances shared ZEV goals and focuses on key areas of the North American ZEV transition, such as charging infrastructure, consumer awareness, Indigenous engagement, and transitioning medium- and heavy-duty vehicles to ZEV.

Enforcement

In the 2022–2023 fiscal year, NRCan processed more than 3.03 million records relating to importing regulated energy-using products to Canada. Over 16.7 million new or revised model numbers were submitted for entry into NRCan’s database.

Domestic Policy

To support the transition to clean energy and reduce diesel consumption in Indigenous, rural, and remote communities, a network of five federal departments was created in 2022—named Wah-ila-toos—to deliver funding in an accessible and efficient manner. In addition, a distinctions-based Indigenous Council was established to support Wah-ila-toos by providing guidance and advice on programs and policy development. The Indigenous Council will also direct an engagement process and develop recommendations on a long-term strategy for the clean energy transition in rural, remote, and Indigenous communities.

The Government of Canada is reviewing and modernizing the 1992 *Energy Efficiency Act*. This will allow us to continue improving energy efficiency while also supporting broader current and future priorities, including enhancing competitiveness and promoting innovation.

Collaboration with provincial and territorial governments, the United States and other international partners

Officials from federal, provincial, and territorial governments continue to work together on energy efficiency standards including developing a formal framework for enhancing collaboration under the Canadian Free Trade Agreement.

Canada continues to work with the United States on harmonizing energy efficiency regulatory requirements through the Regulatory Cooperation Council and other agreements.





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 regulations published by March 31, 2020, and reported in the 2019-2020 Report to Parliament under this Act.

The current analysis compares the stringency of the energy efficiency standards prescribed under this Act with the stringency of comparable standards as they were established on March 31, 2023 by eight jurisdictions: the provinces of British Columbia, Ontario, Quebec, Manitoba, Nova Scotia and New Brunswick, and nationally in the United States of America (U.S.A) and United Mexican States (Mexico). 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. Given that Canada is significantly harmonized with the U.S.A. and that the U.S.A. federal standards pre-empt state standards, the stringency comparison was made on a national basis.

Since March 31, 2020, the proportion of federal standards that are at least as stringent as comparable standards in the provinces and in Mexico either increased or remained the same. Harmonization increased with British Columbia, Ontario and New Brunswick because they established standards equivalent to the federal government’s. The differences in stringency between the provincial standards and the federal standards as well as the differences in product regulation provide opportunities for further federal-provincial collaboration and potential harmonization under the [Regulatory Reconciliation and Collaboration Table \(RCT\)](#).

During the same time, the U.S.A had an active period of regulatory work. As a result, the number of Canadian less stringent than their American counterparts became temporarily higher, pending completion of harmonization efforts in our country. Negative impacts on trade or energy savings in Canada, if any, should be negligible given that Canada’s equivalent standards are expected to be in place by the time the U.S.A’s new requirements become effective.

TABLE 1. COMPARISON OF THE STRINGENCY OF CANADA’S STANDARDS, BY MARCH 31, 2023

	U.S.A.	Mexico	BC	ON	QC	MB	NS	NB
Canada’s standards are equivalent	49	5	11	69	58	0	7	76
Canada’s standards are more stringent	7	9	8	1	0	2	31	0
Canada’s standards are less stringent	11	6	3	5	2	0	3	0
Total standards available for comparison	67	20	22	75	60	2	41	76
Percentage of Canadian standards at least as stringent as comparable standards	84%	70%	86%	93%	97%	100%	93%	100%

Note: Numbers are not directly comparable with the previous analysis due to methodology changes.





PROGRAM RESULTS SINCE THE FIRST REGULATIONS IN 1995

Cumulative to Date

4,785 PJ

energy saved since 1995

680 MT

GHG emissions avoided since 1995

17

regulatory amendments made since 1995

70+

regulated products

In 2022-2023

349.79 PJ

in energy saved by regulations in 2022-2023.
That is equivalent to the energy use of more
than 3.4 million homes for one year

44.72 MT

emissions avoided in 2022-2023

Cumulative by 2030

7,889+ PJ

expected energy savings

1,062 MT

avoided emissions expected by 2030



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