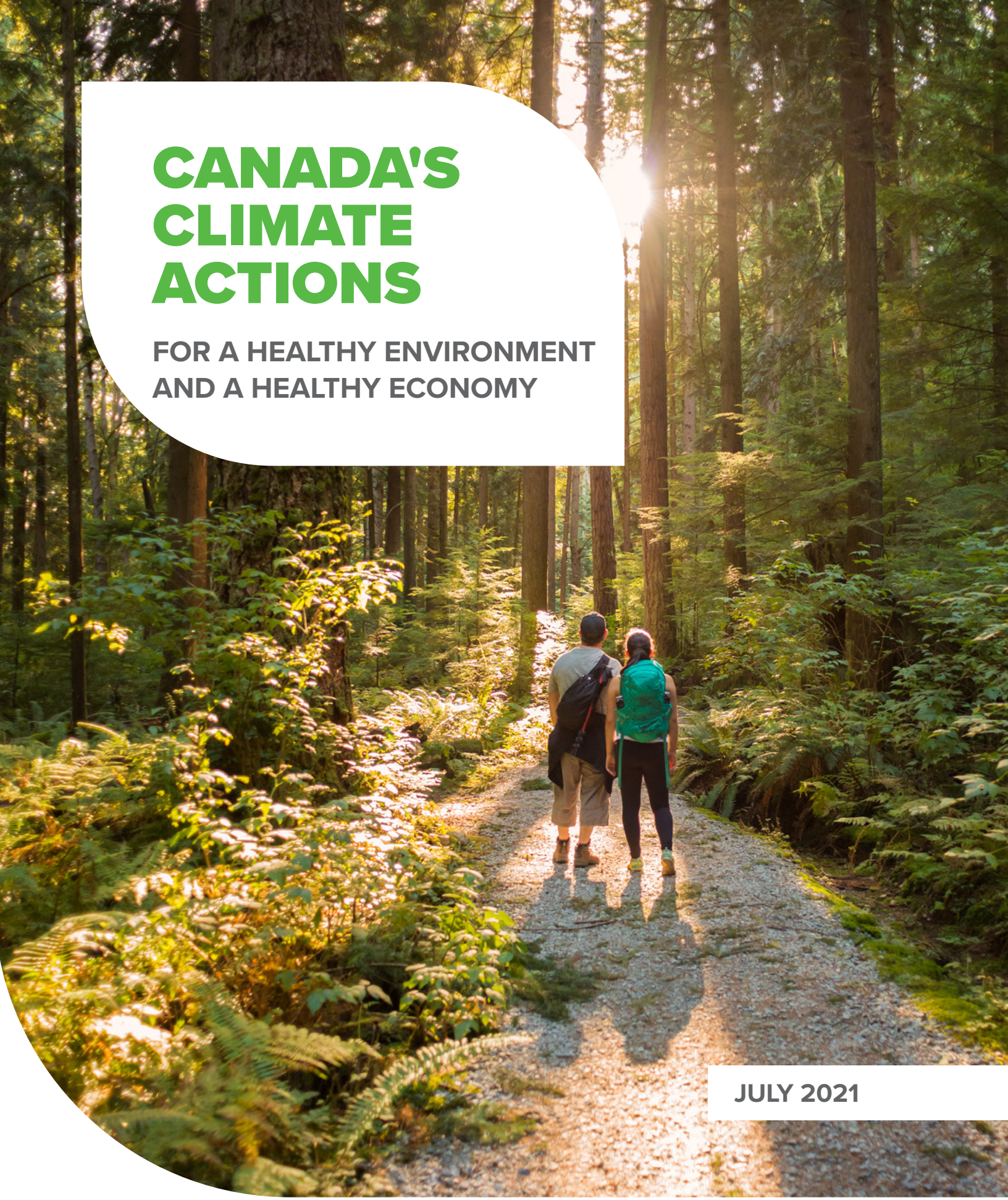


CANADA'S CLIMATE ACTIONS

FOR A HEALTHY ENVIRONMENT AND A HEALTHY ECONOMY

JULY 2021

Environment and Climate Change Canada
Environnement et Changement climatique Canada

Canada

EC21125

Environment and Climate Change Canada
Public Inquiries Centre
12th Floor, Fontaine Building
200 Sacré-Coeur Boulevard
Gatineau QC K1A 0H3
Telephone: 819-938-3860
Toll Free: 1-800-668-6767 (in Canada only)
Email: enviroinfo@ec.gc.ca

Aussi disponible en français

FOREWORD

Climate change, and the threat it poses for our environment, the planet's biological diversity, our food security and our community health, has been increasingly well understood for more than two decades. Less well understood has been the question of how we can collectively find solutions and correct course.

Can we? Should we? Will we? Are we?

Canada is committed to reducing its emissions by 40 to 45 percent below 2005 levels by 2030. And to achieving net-zero by 2050. This is exactly what science tells us we must do.

After more than a year of dealing with the pandemic, countries around the world are taking the opportunity to build back in a way that addresses climate change and delivers a stronger economy in a low-carbon world. Canada and Canadians stand to gain – both from the environmental benefits of climate action to a country that's warming at twice the global average, and from the economic opportunity to mobilize Canada's skilled workers, natural resources and fast-growing tech sector in the accelerating clean growth transition.

We can, we should, we will and we are.

I see it in places like in the Laurentians region of Québec where Lion Electric is expanding its manufacturing plant to build more zero-emission buses.

In Estevan, Saskatchewan, where Covenant Energy is looking to build a renewable diesel facility, while recycling the hydrogen that is produced in the process.

I see it in Halifax, where CarbonCure Technologies is earning international accolades – and contracts – for its technology that injects carbon dioxide into fresh concrete.

In Alberta, where ATCO and Suncor recently announced their intention to partner and deliver a hydrogen project that would produce more than 300,000 tonnes of hydrogen per year - reducing emissions in Alberta that are equivalent to taking 450,000 cars off the road per year.

It's happening in Ingersoll, Ontario, where GM is investing $1 billion to switch over its plant to build electric delivery vehicles instead of gasoline-powered SUVs.

And I see it at home in Vancouver, where the world's tallest timber building, at 18 stories, now rises on the University of British Columbia campus.

Necessity is the mother of invention, and the global transition to a zero-emission economy is underway. The biggest investors in the world are going green and major corporations committing to net-zero. The winners will attract more investment, create more jobs, and enjoy healthier communities. To capitalize, the Government of Canada continues to make historic investments in clean growth and climate action, with approximately $100 billion in commitments since 2016.

This document presents an update on actions taken to support clean growth across Canada. It serves as both an affirmation that the job is underway, and a call to action to see it through.

The investments and decisions we make today will create an environmentally sustainable future and economic opportunity for our children and grandchildren.

The Honourable Jonathan Wilkinson, Minister of Environment and Climate Change

INTRODUCTION

Clean Energy report

On June 17, 2021, Clean Energy Canada released "New Reality", an assessment of economic growth from Canada's climate plan. It found that by 2030, the number of jobs in clean energy is expected to grow almost 50 percent to 639,200 and the sector's GDP is forecast to grow by 58 percent in the same timeframe under the government's plan.

Since the release of Canada's strengthened climate plan, *A Healthy Environment and a Healthy Economy* in December 2020, the Government of Canada moved swiftly to implement key aspects of the plan in order to create jobs, grow the economy and protect the planet. This document provides an overview of climate actions taken in Canada, with a focus on those since December 2020. As committed in the plan, a refined way forward on pricing carbon is also included.

Over the past five years, Canada has taken significant and urgent action to address the climate crisis. Canada is phasing out traditional coal-fired power plants and embracing renewable energy. It is investing in Made-in-Canada technologies and clean solutions. It is improving building codes and standards so homes and buildings use less energy. It is supporting cleaner alternatives to diesel in rural, remote, and Indigenous communities.

The Government of Canada is raising standards so cars run on cleaner fuels and cost less to operate. It is protecting 25 percent of the country's natural spaces by 2025 and 30 percent by 2030. It is putting a price on carbon so it's no longer free to pollute while returning the revenue back to households. With these

actions and investments, we have begun to bend the curve on Canada's greenhouse gas emissions. In fact, in the absence of our climate plan, the country's emissions would have been 34 million tonnes (MTs) higher in 2019.

Fully implementing Canada's plans is required to reduce emissions in line with what science says is needed and to ensure Canada is well-positioned to take advantage of the significant economic opportunities associated with a growing low-carbon global economy.

The world is evolving, and Canada is evolving with it, to seize the opportunities of a cleaner, low-carbon future. Canadians want to be at the forefront, and the Government of Canada will continue to work with all Canadians to drive down emissions and to create economic opportunity in all regions of the country.

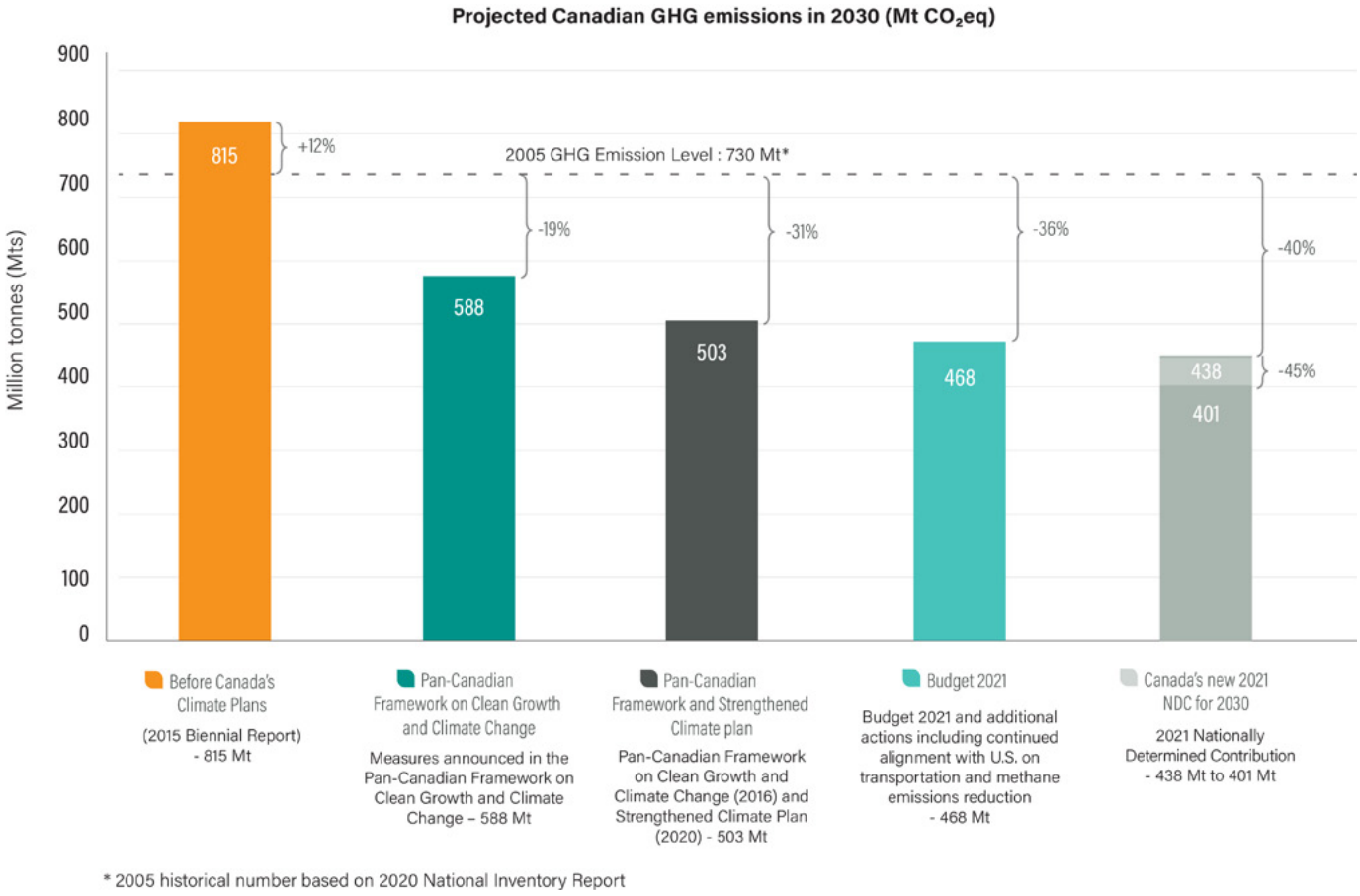
CANADA'S ENHANCED NATIONALLY DETERMINED CONTRIBUTION

Under the Paris Agreement, countries are required to submit national greenhouse gas emission reduction targets, called Nationally Determined Contributions (NDCs), every five years. Each successive NDC is required to be more ambitious than the previous one. In April 2021, Canada announced its new NDC of achieving a 40 to 45 percent reduction below 2005 levels by 2030.

This new and ambitious goal is consistent with the results of a survey of Canadians' perspectives on what Canada's new target should be – wherein the vast majority of respondents called for increased climate ambition for 2030. Canada's enhanced NDC reflects input received from provincial and territorial governments, as well as from First Nations, Inuit and Métis peoples. Canada is among the first countries to include substantive input from subnational bodies and Indigenous peoples into the NDC Submission to the United Nations Framework on Climate Change.

Moving forward, the Government of Canada will continue to work with provinces, territories, Indigenous peoples, civil society, industry, and other partners to advance shared priorities that will further lower emissions and grow the economy.

MEASURING PROGRESS



Continually raising our climate and economic ambition and actions, since 2015, has put Canada on a path to significantly reduce emissions. Canada's emissions were on a steady upwards climb projected to increase 12 percent above 2005 levels by 2030.

Canada's first-ever national climate plan, Pan-Canadian Framework on Clean Growth and Climate Change, was adopted in 2016 and is doing significantly more to cut carbon pollution in a practical and affordable way than any other plan in Canada's history.

In December 2020, the Government of Canada introduced a strengthened climate plan, *A Healthy Environment and a Healthy Economy*, which provided a detailed pathway and very specific initiatives that would reduce emissions 31 percent below 2005 levels by 2030—meaning Canada would not just meet but exceed its target at the time (which was 30 percent below 2005).

Significant investments in fighting climate change were made in Budget 2021 to address emissions from heavy industry and from buildings. Concurrently, Canada and the United States have worked together under an environmental and climate partnership to identify key areas in which joint work could accelerate environmental and economic progress. Taken together, these actions have provided a defined pathway to go beyond 31 percent reduction to achieving a 36 percent reduction below 2005 levels by 2030.

Government of Canada investments in climate action and clean growth

The Government of Canada has invested over $100 billion toward climate action and clean growth since 2015, with roughly $60 billion from 2015 to 2019 and $53.6 billion towards Canada's green recovery since October 2020.

Recently, the Government of Canada—alongside other members of the G7—established a new target, one that is both ambitious yet attainable. This target, of achieving reductions of 40 to 45 percent range by 2030, is in line with what scientific and economic analyses show must be done if we are to achieve a prosperous net-zero future by 2050.

With less than a decade left to 2030, and with countries around the world quickly moving to a cleaner economy, Canada's new target is required and reflects both the scale of the climate crisis and economic opportunity that climate action presents.

MAKING THE PLACES WE LIVE AND GATHER MORE AFFORDABLE BY CUTTING ENERGY WASTE

Homes and buildings account for 18 percent of Canada's emissions and there are more than 285,000 workers in Canada at present that conduct energy efficiency-related work in the construction industry from installation to contracting. Making Canada's building sector more energy efficient will cut pollution, save households and businesses money on energy costs and create jobs in all parts of the country and sectors of the economy.

HOME ENERGY RETROFITS

Improving the energy efficiency of our homes makes them more comfortable, while lowering monthly energy costs for homeowners and renters.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- launched the Canada Greener Homes Grant, which is providing up to 700,000 Canadian households with grants, of up to $5,000, to make energy efficiency and climate resilience home improvements, supported by an EnerGuide evaluation
- invested $10 million to recruit, train and mentor up to 2,000 new EnerGuide energy advisors who will conduct evaluations and provide expert advice to homeowners to meet increased demand, including efforts to recruit more women into this growing field
- investing $4.4 billion to help homeowners and landlords complete deep home retrofits and better protect homes from climate risks by providing interest-free loans worth up to $40,000

- recognizing that lower-income households may not have the means to invest in high-efficiency technologies or benefit from their energy-cost savings, especially if the benefits are only available to homeowners and not to renters, this program will have a stream of funding to support low-income homeowners and rental properties serving low-income renters

The actions listed above build on previous efforts including:

- creating a national housing strategy that requires energy efficiency improvements for both retrofits and new builds and that has made investments in social housing upgrades, improving energy efficiency by at least 25 percent
- investing $247 million through the Low Carbon Economy Fund (LCEF) in 21 provincial and territorial home and building retrofit programs

MUNICIPAL AND COMMUNITY BUILDINGS

According to the Federation of Canadian Municipalities, community centres, sports facilities and cultural spaces represent 28 percent of greenhouse gas emissions in municipally owned facilities, and there are thousands of these aging facilities across Canada. Upgrading and improving the energy efficiency of municipal and community buildings will save taxpayer dollars, cut pollution and create jobs.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- launched the Green and Inclusive Community Buildings program which commits $1.5 billion in projects that improve retrofits, repairs or upgrades, and new builds. Projects eligible for the program could include the installation of energy efficient windows in public libraries and ventilation improvements in Indigenous cultural centers
  - at least 10 percent of this funding will be allocated to projects serving First Nations, Inuit, and Métis communities, including Indigenous populations in urban centres

The actions listed above build on previous efforts including:

- investing $1 billion in Budget 2019 in municipal energy efficiency initiatives. The funding is divided into four streams that are supporting:
  - municipalities in establishing innovative financing programs to support homeowners in undertaking home energy retrofits
  - affordable housing providers in pursuing significant energy-savings through the retrofitting of existing units or the construction of new net-zero energy ready buildings
  - increased energy efficiency in community recreational buildings through energy monitoring and analysis, commissioning, and retrofits
  - the establishment of a network of seven urban climate centres in large municipalities from coast-to-coast

COMMERCIAL AND LARGE-SCALE BUILDING RETROFITS

In addition, the Canada Infrastructure Bank's $2 billion target for green infrastructure, as part of its Growth Plan, will use innovative financing tools to work with public and commercial building owners on energy efficient retrofits.

LONG-TERM INFRASTRUCTURE PLANNING

Twenty-first century energy systems, public buildings, broadband networks, roadways, public transit, and natural spaces all contribute to Canada's long-term economic productivity and prosperity. Smart, resilient public infrastructure projects also require careful planning.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- published an Engagement Paper on Canada's first-ever National Infrastructure Assessment, *Building the Canada We Want in 2050*, which will help identify needs and priorities for Canada's built environment with the ultimate goal of improving infrastructure planning and helping governments make informed decisions about infrastructure projects
- as part of Budget 2021, proposed to provide $14.9 million over 4 years, starting in 2022-23, with $77.9 million in future years, to Public Services and Procurement Canada for a Federal Clean Electricity Fund to purchase renewable energy certificates for all federal government buildings

The actions listed above build on previous efforts including:

- working with provincial and territorial governments to develop and adopt increasingly stringent model building codes, with the ultimate goal of a net-zero energy-ready model building code by 2030 and a new model retrofit code for existing buildings
- taking action to ensure new federal buildings are net-zero and that all major building retrofits will be low-carbon as part of the updated greening government strategy

MAKING CLEAN, AFFORDABLE TRANSPORTATION AND POWER AVAILABLE IN EVERY COMMUNITY

INVESTMENTS IN PUBLIC TRANSIT NETWORKS

Better public transit helps people get around in faster, cleaner, and more affordable ways. Helping communities invest in zero-emission transit options ensures cleaner air for our kids, creates jobs and supports Canadian manufacturing.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- invested $14.9 billion in public transit funding over eight years, which includes permanent funding of $3 billion per year for Canadian communities beginning in 2026-27
  - In the near-term, these investments will allocate $2.75 billion towards zero-emission buses ; $2.5 billion for major transit projects; $400 million for active transportation and $250 million for rural transit solutions from 2021-2026
- finalized a deal with the Government of Ontario wherein the federal government is investing over $12 billion as part of the largest public transit investment in the Greater Toronto and Hamilton Area's (GTHA) history, which includes:
  - $10.4 billion in the GTA for the Ontario Line, Eglinton Crosstown West Extension, Yonge North Subway Extension, Scarborough Subway Extension
  - $1.7 billion to support the full LRT line in Hamilton from McMaster University to Eastgate at Centennial Park
  - $180 million to enable the Toronto Transit Commission to purchase a total of 60 zero-emission streetcars that will be made in Thunder Bay and La Pocatière, thereby protecting jobs

- invested, with the Government of Quebec, in the construction of the Réseau express métropolitain (REM) station at the Montréal-Trudeau International Airport
  - this work will help reduce traffic congestion and improve accessibility and connectivity to the airport by offering an environmentally sustainable link between downtown Montréal and the airport
- announced up to $1.3 billion in federal funding toward the Surrey Langley SkyTrain extension project. The Province of British Columbia and its partners will fund the remainder of the costs for the project
  - the Surrey Langley SkyTrain extension project will support an area with a fast-growing population representing 25 percent of the population of Metro Vancouver, help improve public transit accessibility for residents and businesses south of the Fraser River, connect more people to housing, employment, and schools, and encourage greater development around SkyTrain stations. The project will also create approximately 3,000 full-time, well-paying middle class jobs
- confirmed the Government of Canada's commitment to invest up to $1.53 billion to build the new Green Line as part of Calgary's Light Rail Transit (LRT) system.
  - the Government of Alberta is contributing $1.53 billion toward the new Green Line LRT project. The City of Calgary is contributing $1.59 billion. As the largest infrastructure project in the city's history, the Green Line will play a key role in shaping the future of Calgary by connecting people and places, reducing congestion, and creating up to 20,000 jobs

The actions listed above build on existing progress including:

- spending over $18.5 billion in more than 1,350 public transit projects across Canada
- setting aside $28.7 billion through the Investing in Canada Plan to support public transit projects, including $5 billion available for investment through the Canada Infrastructure Bank

> **Investing in public transit**
>
> Investments in public transit projects across Canada have helped build more than 240 km of new public transit subway and light rail line, and purchase over 300 electric buses.

ZERO-EMISSION BUSES AND SCHOOL BUSES

The Government of Canada is committed to purchasing 5,000 more zero emission buses across the country.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- announced $2.75 billion investment for zero-emission buses over the next five years starting in 2021
- announced three agreements in principle between the Canada Infrastructure Bank and partners to support the purchase of zero-emission buses and school buses. The agreements include:
  - up to $30 million towards the purchase of up to 280 zero-emission school buses (ZEBs) for students, parents and educators in British Columbia
  - up to $14.4 million to purchase 20 new zero-emission public transit buses (ZEBs) for the City of Edmonton Transit Service
  - up to $400 million to help OC Transpo adopt 450 ZEBs by 2027, which – once complete – will represent the largest conversion of public transit vehicles in Canada and will help the City of Ottawa achieve its goal of becoming the first Canadian city with a fully electric bus fleet

CANADA'S ZERO-EMISSION VEHICLE FUTURE

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- announced new mandatory sales targets of 100 percent new light-duty vehicle and passenger trucks in Canada to be zero-emission by 2035.
  - that same day, General Motors Canada announced that it would will end production of the Equinox crossover at its CAMI plant in April – earlier than previously planned – to produce the BrightDrop EV 600 electric commercial van at its Ingersoll, Ontario plant – in order to keep up with demand.
- worked with the United States to develop a joint statement between the Prime Minister of Canada and the President of the United States of America to take aligned and accelerated policy actions to achieve a zero-emissions vehicle future
  - since then, this shared priority has been advancing under the High Level Canada-U.S. Ministerial Dialogue on Climate Ambition led by the Minister of Environment and Climate Change Canada and the United States' Special Presidential Envoy for Climate, where emissions reductions from the transportation sector is among one of key streams of work
- introduced a 50 percent corporate tax cut for small and medium-sized businesses manufacturing zero-emission vehicles and components in Canada

> **Jobs in the electric vehicle industry**
>
> A recent report by Clean Energy Canada found that 184,000 workers are expected to be employed in the electric vehicle industry—a 26-fold increase over 2020—much of which can be attributed to increasing adoption of electric vehicles.

The actions listed above build on previous efforts including:

- making zero-emission vehicles more affordable by providing Canadians with up to $5,000 off their purchase of such a vehicle and full tax write-offs for businesses purchasing them
- investing more than $460 million to ensure Canadians have access to EV chargers and alternative refueling where and when needed
- committed to provide $295 million to the Ford Motor Company of Canada's $1.8 project to build electric vehicles at its Oakville Assembly Complex
  - this project will help secure 5,400 well-paying middle class jobs at the Oakville Assembly Complex

> **Making electric vehicles (EVs) easier to use and afford**
>
> The government's iZEV incentive has helped 92,000 people to date. The government's investments in EV chargers and refuelling stations have supported the installation of more than 16,500 EV chargers, 15 hydrogen stations, and 21 natural gas stations, with many more chargers and stations to come.

PROMOTING ACTIVE TRANSPORTATION

Pathways and trails for cycling, walking, hybrid e-bikes and scooters, and wheelchairs give everyone the opportunity to get out, get active, and access public transportation.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- announced the first-ever federal fund dedicated to building active transportation through Canada, supported by $400 million in new investments that will help build new and expanded networks of pathways, bike lanes, trails and pedestrian bridges

- launched consultations on Canada's first-ever national Active Transportation Strategy that will:
  - support the active transportation networks of the future;
  - promote healthier, walkable communities that are environmentally sustainable and affordable; and
  - support better data collection to ensure measurable outcomes

The actions listed above build on previous efforts including:

- investments in active transportation through the Investing in Canada Plan which are supporting almost 650 kilometres of new active transportation trails, bike and pedestrian lanes, and recreational paths
  - Projects include the Flora Foot Bridge in Ottawa, a bikeway extension in Corner Brook, and a new cycling path along the Mine, Notch and Kingsmere corridor in Chelsea, Quebec

MAKING CANADA A LEADER IN CLEAN POWER

Canada's electricity grid is over 80 percent emissions-free—one of the cleanest in the world—and is on track to meet its goal of having 90 percent non-emitting electricity generation by 2030. Continued action is needed for the environment, for the economy and for peoples' health.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- launched the Smart Renewables and Electrification Pathways Program to support projects that will lower emissions by investing in clean energy technologies, like wind, solar, storage, hydro, and geothermal
- released a policy statement on thermal coal mining which states that the continued mining and use of thermal coal for energy production in the world runs counter to what is needed to effectively combat climate change. The policy statement states that new coal mines or mine expansions will be deemed to cause unacceptable environmental impacts and this finding will inform how any new thermal coal mining projects or project expansions will be assessed
- enhanced its efforts to work with provinces to negotiate and help finance the development of new electricity interties to expand access to clean hydroelectricity
- invested $40.4 million in Budget 2021 to support the feasibility and planning of hydroelectricity and grid interconnection projects that will provide clean power to northern communities
- as noted above, invested $14.9 million in Budget 2021 towards a Federal Clean Electricity Fund to purchase renewable energy certificates for all federal government buildings and support the government's commitment to power federal buildings with 100 percent clean electricity by 2022
- invested $36 million in Budget 2021 over three years, starting in 2021-22, for the Strategic Partnerships Initiative program to build capacity for local, economically-sustainable clean energy projects in First Nations, Inuit, and Métis communities
- signed an agreement in principle between the Canada Infrastructure Bank (CIB) and ITC Investment Holdings to invest $1.7 billion in the Lake Erie Connector Project, a 117 kilometres underwater transmission line connecting Ontario with the PJM Interconnection—the largest electricity market in North America
  - over its life, the project is expected to provide 845 permanent jobs and economic benefits by boosting Ontario's GDP by $8.8 billion
  - the project will help lower electricity costs for customers in Ontario, improve reliability and security of Ontario's energy grid, and reduce emissions on both sides of the border

- launched a Small Modular Reactor (SMR) Action Plan which builds on the SMR Roadmap released in 2018, to lay out the next steps to develop and deploy this technology
- worked, and will continue to work, with provinces, territories, utilities, industry and interested Canadians to ensure that Canada's electricity generation achieves net-zero emissions before 2050

The actions listed above build on previous efforts including:

- helped more than 130 off-grid and Indigenous communities switch from diesel and other fossil fuels to cleaner sources of heat and power like biomass and solar
- promoted clean energy in Indigenous and remote communities through the Clean Energy for Remote and Rural Communities program, with $220 million invested in 88 projects to date – 90 percent of which are for Indigenous communities
- brought forward regulations to accelerate the phase-out of coal-fired electricity by 2030, while supporting programs that provide a just transition for workers and communities for whom coal has been a source of good, fulfilling work for decades
  - Canada's planned phase-out of coal-fired power by 2030 would avoid more than 1,000 premature deaths and yield an additional $5 billion in health benefits by 2035
- appointed a Task Force on Just Transition for Canadian Coal Power Workers and Communities, to consult with coal workers and communities and advise the government on how best to support them and made progress on implementing their recommendations
- invested $35 million in Budget 2018 in transition centres to help coal workers find new opportunities and support skills development
- invested $150 million in Budget 2019 to support new infrastructure development in coal communities
- invested in new transmission infrastructure, including:
  - $86.3 million for clean energy in the Peace Region in British Columbia;
  - $21.3 million to integrate more renewables in Prince Edward Island; and
  - $18.7 million to bring Manitoban hydroelectricity to Saskatchewan
- committed to support the Canada Infrastructure Bank's long-term target of $5 billion for clean power, which includes renewables, storage, and transmission lines

Renewable energy growth in Alberta

A report by the Canada Energy Regulator from March 2021 found that Alberta is expected to see the fastest growth in renewable energy capacity between 2018 and 2023, as new wind and solar projects help replace coal-fired electricity. By 2023, 26 percent of Alberta's electricity capacity will come from renewable sources, up from 16 percent in 2017. And as Alberta updates its electricity grid, a report by Clean Energy Canada found that the province is on track to see a surge in wind power jobs (a 22 percent increase per year).

CONTINUING TO ENSURE POLLUTION ISN'T FREE AND HOUSEHOLDS CAN GET MORE MONEY BACK

CARBON PRICING IN CANADA

Putting a price on pollution reduces emissions and encourages innovation. Canada has proven that this can be done in a manner that keeps life affordable. Canada's leadership on carbon pricing has been recognized internationally, including by the International Monetary Fund which recently stated that "*carbon pricing is the most efficient mitigation instrument and success in Canada provides a model for others.*"

Since 2019, the Government has ensured it is no longer free to pollute by establishing a national minimum price on pollution starting at $20 per tonne in 2019, increasing at $10 per tonne to $50 in 2022.

The Government's approach to pricing carbon pollution gives provinces and territories the flexibility to implement the type of system that makes sense for their circumstances as long as they align with minimum national stringency standards, or 'benchmark' criteria.

In provinces where it applies, the federal carbon pricing system returns all direct proceeds from the fuel charge to those living in the relevant province or territory. These funds are returned to individuals, communities, and businesses. Approximately 90 percent goes directly to people when they file their taxes through Climate Action Incentive payments, with the majority of families receiving more money back than they pay. In 2020, the Parliamentary Budget Officer confirmed that Canada's approach supports low and medium-income families the most.

Supreme Court decision on carbon pricing

On March 25, 2021, the Supreme Court of Canada found that carbon pollution knows no boundaries and that Parliament has the authority to address it by applying a price on carbon pollution in jurisdictions that do not have their own system that meets minimum national stringency standards. *"All parties to this proceeding agree that climate change is an existential challenge. It is a threat of the highest order to the country, and indeed to the world.. The undisputed existence of a threat to the future of humanity cannot be ignored," [...] [Carbon pricing] is critical to our response to an existential threat to human life in Canada and around the world"* reads the majority decision. Canada's case for carbon pricing was supported at the Supreme Court by a diverse group of intervenors including labour groups, Indigenous peoples, provinces, environmental organizations and youth.

CARBON PRICING TRAJECTORY FROM 2023 TO 2030

In order to accelerate the market adoption of the technologies and practices needed to reduce emissions and to build a prosperous low carbon economy, Canada proposed in *A Healthy Environment and a Healthy Economy* to increase the price on pollution annually at a rate of $15 per tonne from 2023-2030.

In this context, the government narrowed the scope of the Clean Fuel Standard to cover only liquid fossil fuels. Given that these are used mainly in transportation, the Clean Fuel Standard will not include a regulatory obligation for heavy and light oil (which are predominantly used in stationary applications) and distillate fuel oils used in space heating. This will help address affordability concerns in areas that presently rely heavily on home heating oil.

Following engagement with provincial and territorial partners and Indigenous leaders, the government is confirming its proposal that the minimum price on carbon pollution will increase by $15 per tonne each year starting in 2023 through to 2030. Canadians living in jurisdictions where the federal system applies, and where the federal government returns fuel charge proceeds through Climate Action Incentive payments, will continue to receive rebates that increase each year as the carbon price increases.

MORE CONSISTENCY, CERTAINTY AND FAIRNESS

The initial carbon price and its trajectory up to 2022 was set in 2016. The pan-Canadian approach to pricing carbon pollution also established the design criteria that all pricing systems in Canada need to meet.

In 2020-21, a review of carbon pricing systems in Canada was undertaken. This included an independent expert assessment, led by the Canadian Institute for Climate Choices, which found there are significant variations in the stringency and effectiveness of the different systems across Canada. The results of this assessment support that while carbon pricing can be a key driver of emissions reductions, changes in how systems presently operate are necessary to ensure all such systems across the country are similarly effective in cutting pollution and supporting domestic competitiveness.

As Canada looks to significantly reduce emissions and to incent innovation it is important that longer term certainty is provided with respect to how pollution pricing will work going forward. Beyond simply the rate at which the price will rise, it is also important that the "benchmark" criteria for all systems are updated to ensure all systems across Canada will be comparable in terms of stringency and effectiveness.

The new criteria that will apply to all systems starting in 2023 will include a requirement that all provincial and territorial systems cover the same portion of emissions as would be covered by the federal system or "backstop". The new criteria will also require that provincial and territorial systems and other government measures don't weaken the price signal - for example by reducing fuel taxes specifically to offset increased carbon prices.

The new “benchmark” criteria are summarized here in more detail, and the full text of the new benchmark will be published later this month.

Presently, the government conducts an annual assessment of provincial and territorial carbon pricing systems against the minimum national stringency standards. Next year, the government will move to multi-year assessments, requiring jurisdictions to propose carbon pricing systems for 2023 that align with Canada’s future benchmark requirements through to 2030—rather than once a year—which means systems will change less frequently. This will provide greater certainty and stability for consumers, businesses and investors.

To provide further stability, where the federal backstop system currently applies, the earliest any new proposed system will be able to replace it will be January 2023. Existing provincial and territorial systems and the new output-based pricing systems slated for implementation in New Brunswick and Ontario can continue to apply in 2022 and beyond so long as they meet the benchmark criteria.

It is estimated that pricing will contribute over a third of the total reductions that will occur between now and 2030.

A NATIONAL OFFSET SYSTEM

Canada is also creating an offset system to create opportunities for foresters, farmers, Indigenous communities and other project developers who implement innovative projects to reduce carbon pollution.

On March 5, 2021, the Government announced draft regulations to establish the Federal Greenhouse Gas Offset System. The system is a market-based approach that will spur innovation and private-sector investment in economic activities that lead to further emissions reductions, while helping to keep Canadian industry competitive.

RETURNING THE PROCEEDS OF CARBON PRICING TO CANADIANS

In jurisdictions where the federal backstop system has applied because a province or territory (PT) has chosen not to implement its own system or request the federal system, the federal government has returned the majority of fuel charge proceeds to households. This will continue to be the case going forward.

This year, a family of four received $600 in Ontario, $720 in Manitoba, $1,000 in Saskatchewan and $981 in Alberta. Beginning in 2022, these payments will change from a refundable credit claimed annually on personal income tax returns to quarterly payments made through a benefit system.

The Government is also developing and implementing new programs to better support Indigenous groups, small and medium-sized enterprises, and farmers with the remaining approximately 10 percent of the proceeds. Farmers already receive targeted relief under Canada’s carbon pricing system. For example, the federal fuel charge does not apply to gasoline and diesel used in tractors, trucks and other machinery used on-farm.

Recognizing that many farmers also use natural gas and propane in their operations, the Government confirmed in Budget 2021 that it will return a portion of the proceeds from the price on pollution directly to farmers in backstop jurisdictions, beginning in 2021-22. It is estimated farmers would receive $100 million in the first year. Further details will be announced later in 2021 by the Minister of Finance.

Small and medium sized enterprises (SMEs) are a major employer across Canada providing essential goods and services for Canadians. A number of SMEs are exposed, directly or indirectly, to international markets where goods and services may not be subject to carbon pollution pricing. In order to help these businesses

be more competitive, a dedicated portion of the carbon price revenue (in jurisdictions using the backstop) will be delivered through a program to trade exposed SMEs and will share more information on program design in due course.

As of 2020-21, Canada has tripled the net fuel charge proceeds available to Indigenous governments in federal backstop jurisdictions. These proceeds will be returned through co-developed solutions.

Proceeds from the federal pricing system for trade exposed industries—the Output-Based Pricing System—will be returned to the jurisdiction of origin through new programs to support industrial decarbonisation projects and greening the electricity sector. Projects could include things like helping households transition away from home heating oil. More details will be released in fall 2021.

GUIDANCE FOR RETURNING CARBON POLLUTION PRICING PROCEEDS TO SUPPORT CANADIANS AND DRIVE CLIMATE AMBITION

Carbon pricing pollution systems may be designed in a number of different ways. The Government of Canada's approach is one that keeps affordability at the centre of its policy.

Provincial and territorial governments that request the federal system or that implement their own systems have the ability to utilize proceeds as they see fit. An important consideration for all jurisdictions is making sure the carbon price doesn't negatively affect vulnerable households, businesses and Indigenous communities. To support these considerations and to better inform decision-making, the Government of Canada has developed and shared a guidance document with provinces and territories entitled *Guidance for Using Carbon Pollution Pricing Proceeds to Support Canadians and Drive Climate Ambition*.

The guide outlines approaches for returning proceeds to support affordability for low-income, vulnerable populations and Indigenous peoples while maintaining the carbon price signal required to reduce the emissions. It also provides advice about options to return proceeds that help address impacts on business competitiveness.

MAINTAINING INTERNATIONAL BUSINESS COMPETITIVENESS

With the goal of addressing carbon leakage risks and protecting Canadian businesses from unfair competition resulting from firms not subject to carbon pricing, Canada is also:

- continuing to utilize the Output-Based Pricing System, which is designed to support the competitiveness of emissions-intensive, trade-exposed industries in Canadian jurisdictions where the federal backstop applies; and
- exploring with the European Union and others, the potential around border carbon adjustment measures.

BUILDING AND SECURING CANADA'S CLEAN INDUSTRIAL ADVANTAGE

Canada's industrial advantage and the jobs that will come from seizing it will depend on the speed and success of decarbonisation efforts In order to achieve the country's full potential and get to a prosperous net-zero emissions future by 2050, the Government of Canada is helping Canadian companies meet the demands of consumers for low and zero-carbon goods and services through investments, regulations and other measures.

SUPPORTING BUSINESSES TO TRANSITION TO CLEAN TECHNOLOGY

Clean technology companies currently employ more than 341,000 Canadians in well-paying jobs. The world is taking notice of Canada's leadership in clean technology – 11 Canadian companies, nine of which have been funded by Sustainable Development Technology Canada (SDTC), were recently placed on the 2021 Global Cleantech 100 list. The environmental and clean tech sector grew at 25 percent from 2012 to 2019, outpacing the overall Canadian economy, which grew at 16 percent over the same period.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- introduced a 50 percent corporate clean technology tax cut in Budget 2021 for small and medium-sized businesses manufacturing zero-emissions technologies
- invested $44.3 million in 11 Canadian clean technology companies that are leading breakthrough Canadian clean technology innovations through SDTC, including:
    - Terramera Inc. of Vancouver, British Columbia, which is receiving $7.9 million to develop a soil carbon validation tool; and

  - Flyscan System Inc. of Quebec City which is receiving $1.5 million for an aerial detector of liquid pipeline leaks
- committed to investing up to $1 billion in Budget 2021 to help draw in private sector investment for clean tech projects

Government of Canada investments in clean technology have totaled more than $3 billion since 2016.

The actions listed above build on previous efforts including:

- investing more than half a billion dollars in Canadian clean technology firms since 2018 through the Business Development Bank of Canada (BDC), who is working with some 62,000 Canadian entrepreneurs
- investing $750 million for SDTC to support more Canadian entrepreneurs as they create and commercialize clean technologies and bring Canadian innovations to market. This is the largest investment in SDTC since its inception

ACHIEVING NET-ZERO EMISSIONS

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- introduced and passed the *Canadian Net-Zero Emissions Accountability Act*, which received Royal Assent on June 29, 2021, marking the first time a Canadian government has legislated emissions reductions accountability
  - the legislation establishes in law Canada's 2030 emissions reduction target as our National Determined Contribution under the Paris Agreement of 40-45 percent below 2005 levels, our 2050 target of net zero emissions, and sets legal requirements on the current government and future governments to plan, report, and course correct on the path to net-zero emissions by or before 2050
- appointed an independent group of Canadian experts to the Net-Zero Advisory Body that is providing advice to the government on the best ways to achieve net-zero emissions by 2050
- initiated the Net-Zero Challenge for large emitters to support Canadian industries in developing and implementing plans to transition their facilities to net-zero by 2050
  - in consultation with key stakeholders, work is underway to develop a framework this summer to be formally launched this fall. This framework will include technical guidance, best practices and a community of peers, so that companies are supported in the development of climate plans that include: a serious commitment to achieving net-zero emissions by 2050, interim emissions reduction targets, and public climate-related financial disclosures
- partnered with the Canadian cement sector to support a roadmap to net-zero carbon concrete
- invested $36.2 million in Budget 2021 to develop and apply a climate lens that ensures climate considerations are integrated throughout federal government decision-making

> **Pathways to net-zero**
>
> In February 2021, the independent Canadian Institute for Climate Choices released a report on the various pathways Canada could take to achieve net-zero by 2050. Under every scenario examined, the proportion households spend on energy, including home heating, electricity, and transportation, declines for all income groups. The report argues that if managed effectively, the transition to net-zero could improve the well-being of Canadians.

NET-ZERO ACCELERATOR FUND

Helping heavy industry decarbonize is a key priority of the Government of Canada. This will help ensure that Canadian businesses remain competitive by producing the zero and low-carbon goods the world wants to buy now and into the future. Supporting businesses in key sectors to transform—from steel and aluminium to cement—accelerates the adoption of clean technology, helps spur Canada's shift to innovative technologies, and attracts large-scale investments.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- announced a $3 billion top-up to the Net-Zero Accelerator Fund in Budget 2021, bringing the total to $8 billion to help expedite decarbonization projects with large emitters, scale-up clean technology, and accelerate Canada's industrial transformation across all sectors.
- announced the following projects that are being supported through this fund:
  - $15 million in the Nova Bus Transformation Project, to modernize public transit buses, optimize them for electrification, and build other types of all-electric and battery-powered buses; update its manufacturing facilities in Saint-Eustache and Saint-François-du-Lac, Quebec and help maintain 1,118 full-time jobs
  - $50 million to Lion Electric to build a new battery-pack assembly plant in the Laurentians region of Québec. The plant will enable the company to increase its production of electric vehicles. It will create 135 new jobs after construction is completed in 2023 and should create an additional 150 jobs over the longer term
  - $200 million to help Algoma Steel Inc. purchase state-of-the-art equipment at their facility in Sault Ste. Marie, Ontario, in order to retrofit their operations and phase out carbon-intensive steelmaking. This will reduce greenhouse gas emissions by more than 3 million metric tonnes per year by 2030, create 500 well-paying jobs, through the project's construction phase and subcontracting and over 600 new co-op placements for students. Additionally, 75 employees at Algoma will be trained for high-skilled jobs in the science, technology, engineering, and mathematics (STEM) fields

The actions listed above build on previous efforts including:

- as mentioned above, committing to provide $295 million to the Ford Motor Company of Canada's $1.8 project to build electric vehicles at its Oakville Assembly Complex
- committing to invest $60 million to help Elysis - a joint venture between Alcoa Corporation and Rio Tinto that is headquartered in Quebec - develop the world's first carbon-free aluminum to eliminate the industry's carbon footprint in June 2018. Construction began and an additional federal investment of $20 million was announced in June 2021
  - This new company will directly employ 100 people, and has the potential to create more than 1,000 jobs by 2030, while securing 10,500 existing aluminum jobs in Canada

MOVING TO CLEANER FUELS

Clean fuels will play an essential role in Canada's path to net-zero. Thanks to our vast conventional energy resources and biomass feedstocks, clean electricity grid, and our pace-setting clean technology sector, Canada is well-positioned to be a producer of the cleanfuels that consumers are demanding and investors are rewarding domestically and internationally.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- launched the Hydrogen Strategy for Canada, which positions Canada to benefit from the economic and environmental opportunities that hydrogen can present, across the country, while also positioning Canada to be a supplier of choice to the world for clean hydrogen and the technologies to use it
- announced, with the Government of Alberta and City of Edmonton, that three governments are working closely with Air Products Canada Ltd to jointly pursue a $1.3 billion investment in a world scale clean production facility. The clean hydrogen facility would be operational by 2024, a first-mover anchor to secure Canada's early foothold in the global hydrogen market, pending further discussions and a final scope decision from the company
- launched the $1.5 billion Clean Fuels Fund to support the production and distribution of low-carbon and zero-emission fuels, including hydrogen and biomass, which will speed up the transition to clean fuels, technologies and processes
    - this fund complements the Clean Fuel Standard which is a regulation that will increase the development and adoption of clean fuels and technologies by requiring that the fossil fuels that we use become progressively cleaner over time

Developing a vibrant biofuels and hydrogen market in Canada

ATCO and Suncor recently announced their intention to partner and deliver a hydrogen project that would produce more than 300,000 tonnes of hydrogen per year and capture 90 percent of the emissions generated in the hydrogen production process. The project will reduce emissions in Alberta by more than two million tonnes per year, equivalent to taking 450,000 cars off the road per year.

Covenant Energy in Saskatchewan recently announced its intention to turn canola into renewable diesel and sustainable aviation fuel, citing the Clean Fuel Standard in their press release as a primary economic project driver. This initiative could result in up to 60 permanent full-time positions plus hundreds of thousands of hours of employment throughout the project construction.

CARBON CAPTURE, UTILIZATION AND STORAGE

Carbon capture, utilization and storage (CCUS) is a promising technology needing to lower its costs before it can be fully commercialized. The International Energy Agency suggests that CCUS could account for about 20 percent of the global GHG reductions needed by 2050.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- announced its intent in Budget 2021 to introduce an investment tax credit for capital invested in CCUS projects with the goal of reducing emissions by at least 15 million tonnes of CO_2 annually
- committed $319 million over seven years to support research, development, and demonstrations that would improve the commercial viability of carbon capture, utilization, and storage technologies
- launched the Alberta–Canada Carbon Capture, Utilization and Storage (CCUS) Steering Committee to advance climate goals, attract project investments and support economic recovery and future prosperity
- begun the development of a CCUS Strategy for Canada, much like the Hydrogen Strategy, to ensure these decarbonisation technologies help us reach our GHG reduction goals and to keep Canada globally competitive in this growing industry

Canada's Canada Carbon Capture, Utilization and Storage (CCUS) opportunity

A report from RBC Economics found that the latest climate priorities in the United States could spark investments in carbon capture technologies, with CCUS markets potentially worth $12 billion per year in Canada.

SUPPORTING AGRICULTURAL SOLUTIONS

Farmers are on the frontlines of climate change and are key partners in the fight against it.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- launched the $165.7 million Agricultural Clean Technology Program to provide farmers and agri-businesses funding to develop and adopt the latest clean technologies to reduce greenhouse gas emissions and enhance their competitiveness, with:
  - $50 million specifically allocated for more efficient grain dryers
  - $10 million towards powering farms with clean energy and moving off diesel

Clean technology in the agricultural sector

The Agricultural Clean Technology Program (ACT) program will help support projects such as at Winecrush Technology, an Okanagan-based agri-tech company that received up to $124,800 under the original Agricultural Clean Technology program, for their new biomechanical process that transforms the discarded derivatives from making wine and turning them into natural food additives, thereby reducing the GHGs emissions generated by food waste that goes to landfills.

The actions listed above build on previous efforts including:

- invested over $65 million across the federal Government to tackle food waste in Canada
  - this includes the $20 million Food Waste Reduction Challenge, which is incentivizing dozens of Canadian innovators to identify, develop, and bring new solutions to market to reduce food waste
- a $50 million Surplus Food Rescue Program that was launched as part of Canada's response to the pandemic to redirect surplus food caused by disruptions across the restaurant and hospitality industry to food banks and other organizations addressing food insecurity in communities across Canada, which resulted in almost 8 million kilos of food that was rescued
- invested $70 million to hire approximately 75 scientists and science professionals in emerging fields of agricultural science and to address significant environmental challenges in agriculture
- invested almost $25 million to advance innovation in the agricultural bioeconomy, through investments in bioplastics, bioproducts and $20 million Food Waste Challenge.
- investments of over $19 million in biomass and bioproducts research clusters
- ongoing collaboration with fertilizer manufacturers, farmers, provinces and territories to develop an approach to meet Canada's new national emission reduction target of 30 percent below 2020 levels from fertilizers by 2030
  - improving how fertilizers are used through better products and practices will save farmers money and time, and help protect Canada's land and water

ACCESS TO CRITICAL MINERALS: A COMPETITIVE ADVANTAGE

Demand for critical minerals to support the transition to the clean economy is increasing. Canada can leverage its mining and processing expertise to become the global supplier of choice for clean and advanced technologies.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- committed to more than $40 million in Budget 2021 in research and development, including $9.6 million over three years to help create a Critical Battery Minerals Centre of Excellence coordinate federal policy and programs on critical minerals in collaboration with provincial, territorial and other partners
  - the Centre will also help implement the Canada-U.S. Joint Action Plan on Critical Minerals Collaboration, which focuses on net-zero industrial transformation, batteries for Zero-emission vehicle (ZEVs), and renewable energy storage
- committed another $36.8 million towards federal research and development to advance critical battery mineral processing and refining expertise
- released the Canadian critical minerals list, which includes 31 minerals considered critical for the sustainable economic success of Canada and our allies
  - the list is a result of collaboration with other federal departments, exploration, mining and manufacturing industries, and extensive consultation with the provinces and territories
  - the list prioritizes building an industrial base for the low-carbon, digitized economy, and provides greater certainty and predictability to industry, trading partners and investors on what Canada has to offer

> **Canada's competitive advantage**
>
> Canada is one of the few countries in the western hemisphere that has reserves of all the minerals required to produce advanced batteries for electric vehicles, and 14 of the 19 metals and minerals required to produce solar panels are found or produced in Canada.

SUPPORTING WORKERS TO SUCCEED IN A LOW CARBON ECONOMY

As industries transition to a low carbon economy, workers will also need to be supported to take advantage of new job opportunitiesCanada's workers have the skills, ingenuity, and determination to build Canada's net-zero future. Canada is committed to building this future in a way that leaves no one behind.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- proposed to provide $55 million over three years, starting in 2021-22, to Employment and Social Development Canada for a Community Workforce Development Program
  - the Community Workforce Development Program includes two streams, one on de-carbonization and just transition (with 75 percent targeted to underrepresented groups), and another stream on regional development agencies
- proposed to provide $1 billion towards regional green economic development
  - this will position local economies for the long-term by transitioning to a green economy, fostering an inclusive recovery, enhancing competitiveness, and creating jobs in every corner of the country

- invested $2 billion in Budget 2021 to create 500,000 new work opportunities over the next five years, including the $960 million Sectoral Workforce Program, and $250 million to help workers transition
- launched the Hydrogen Strategy for Canada, as mentioned above, which is supported by the Government's $1.5 billion Clean Fuels Fund and which represents an opportunity for Canada's oil and gas workers, as their skills can help to build the hydrogen economy in Canada

The government also remains committed to developing just transition legislation that will be informed by consultations. The legislation will guide the government's ongoing efforts to supporting workers and communities in the transition to a low carbon economy.

Among other initiatives, Canada's actions have included:

- an investment of $1.72 billion to fund the abandonment, remediation and reclamation of orphan and inactive oil and gas wells to create and protect jobs in British Columbia, Alberta and Saskatchewan during the pandemic
  - so far, the three provinces have approved over $600 million for closure activities related to 15,800 inactive oil and gas wells, sites, and related facilities, creating or supporting around 2,600 jobs in the process
- a commitment of up to $750 million to create an Emissions Reduction Fund to reduce emissions in Canada's oil and gas sector (with a focus on methane) while improving the competitiveness during a period of economic recovery from COVID-19
  - since the program launched, the Government of Canada has signed contribution agreements with 15 companies, representing 40 projects across British Columbia, Alberta, Saskatchewan and Manitoba
  - after completion these projects are on track to cut, in their first year, methane emissions equivalent to 3.1 million tonnes of carbon dioxide, roughly equal to removing 674,000 cars from the road

FACTORING CLIMATE RISK INTO DECISION MAKING

In order to ensure a stable and predictable transition to a low-carbon economy, markets, insurers, policy makers, and Canadians need standardized information about the risks and opportunities associated with climate change.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- launched the Sustainable Finance Action Council, whose mandate is to support the growth of a well-functioning sustainable finance market in Canada and strengthen the mobilization of private capital in support of Canada's climate goals. The council comprises 25 organizations, which, combined, have more than $10 trillion in assets
- committed in Budget 2021 to issue its first ever green bond in 2021-22. The inaugural green bond issuance will target $5 billion, subject to market conditions, and will be the first of many issuances. These green bonds will give investors opportunities to finance Canada's work to fight climate change and protect the environment
- committed in Budget 2021 to ensuring more stringent reporting standards around climate risk, such as those developed by the Task Force on Climate-related Financial Disclosures Standards

- committed in Budget 2021 to ensuring that Canada's Crown corporations demonstrate climate leadership by adopting the Task Force on Climate-related Financial Disclosures Standards, or more rigorous standards as applicable to the public sector at time of disclosure, as an element of their corporate reporting
- joined the Task Force on Nature-related Financial Disclosures, which is developing a framework for corporations and financial institutions to assess, manage, and report on dependencies and impacts on nature

The actions listed above build on existing efforts including:

- passed the *Canadian Net-Zero Emissions Accountability Act* which includes a requirement for the government to publish an annual report outlining key measures that federal departments and Crown corporations have taken to manage the financial risks and opportunities related to climate change
- requiring companies who receive funding through the Large Employer Emergency Financing Facility (LEEFF) program to report on how their financial flows align with Canada's net-zero goals
- creating an Expert Panel on Sustainable Finance to investigate ways the financial sector can help encourage and direct funds to low-carbon Canadian initiatives. The Panel's final report contained 15 recommendations outlining opportunities for sustainable growth

Taken together, these measures are intended to help accelerate the flow of capital to investments needed for a sustainable economy.

EMBRACING THE POWER OF NATURE TO SUPPORT HEALTHIER FAMILIES AND MORE RESILIENT COMMUNITIES

Nature-based climate solutions embrace the power of nature to mitigate and adapt to our changing climate. Forests, wetlands, grasslands, and farmland have the ability to absorb and store large amounts of carbon (CO_2), reduce the effects of climate change, keep our air and water clean, and provide habitat for wildlife.

> **The power of nature-based climate solutions**
>
> A recent study by Nature United found that actions targeting forests, grasslands, farmlands and wetlands could help Canada cut its emissions by 78 million tonnes annually in 2030—an amount equivalent to more than a tenth of Canada's current annual emissions.

FUNDING TO SUPPORT NATURE-BASED CLIMATE SOLUTIONS

To fully embrace the power of nature to fight climate change, the Government of Canada established the Natural Climate Solutions Fund (NCSF), which will invest $4 billion over the next 10 years towards planting 2 billion trees and restoring, managing and conserving Canada's natural and managed ecosystems.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- confirmed it is on track to plant 2 billion trees over the next ten years and is creating 4, 300 jobs in the process by:
  - signing agreements with a number of partners to ensure an initial 30 million trees will be planted in 2021 in both urban and rural areas. Planting has begun in a number of sites, including in Prince Edward Island Park and Rouge National Urban Park
  - the new trees represent a 40 percent annual increase in the number of trees already being planted in the country and will sequester up to 12 million tonnes of GHGs annually by 2050
- established an advisory committee of experts on nature-based climate solutions to advise the government on programs that maximize emission reductions and deliver on key biodiversity goals and improve the quality of life for Canadians
- launched the Agricultural Climate Solutions (ACS) program to establish regional hubs of collaborations in every province made up of farmers, scientists and other sectoral stakeholders to develop and share best management practices that store carbon and mitigate climate change
  - an additional $200 million over two years was announced in Budget 2021 to support immediate, on-farm climate action under the program, which will target projects that accelerate emission reductions by improving nitrogen management, increasing adoption of cover cropping, and normalizing rotational grazing
- made progress in advancing the Nature Smart Climate Solutions Fund (NSCSF) which will provide $631 million over ten years towards projects that restore degraded ecosystems; improve land management practices; and conserve carbon-rich ecosystems at high risk of conversion to other uses that would release their stored carbon
  - committed $60 million over the next two years, for the Nature Smart Climate Solutions Fund to target the protection of existing wetlands and trees on farms, including through a reverse auction pilot program

The actions listed above build on previous efforts including:

- making $3 billion available through the COVID-19 Resilience Infrastructure Stream to provinces and territories with added flexibility to fund quick-start, short term projects, including natural infrastructure and tree planting initiatives
- investing $30 million to help small and medium sized forest businesses manage increased operating costs amidst COVID-19, which supported the planting of 660 million trees during the 2020 planting season
- the Highways of Heroes tree campaign, which has planted more than 750,000 of a planned two million trees in Ontario between Trenton and Toronto
- investing $15 million in Forests Ontario to help ensure they can meet their goal of planting 50 million trees

PROTECTING AND CONSERVING NATURE

Canada started the last decade with 9.6 percent of land and freshwater and 0.8 percent of ocean territory protected. Ten years later, 13.1 percent of Canada's land and freshwater and 13.8 percent of its ocean are in protected areas and other effective area-based conservation measures. Canada's marine protected areas system has increased in size more than ten-fold since 2010. In tandem with the government's efforts to restore nature, the Government of Canada is also taking action to protect it.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- committed an historic $2.3 billion over five years in Budget 2021 to protect an additional one million km^2 of Canada's land
  - this puts Canada on track to meet its target of protecting one-quarter of lands by 2025, and will support its goal of 30 percent by 2030
  - a portion of the funding will go towards Indigenous Protected and Conserved Areas (IPCAs), Indigenous Guardians programs, provincial and territorial protected areas and the protection of species at risk
- invested an additional $976.8 million in Budget 2021 to help Canada reach its target of protecting 25 percent of oceans by 2025 and 30 percent by 2030, to help restore commercial fishing stocks, and Canadians' quality of life, especially in coastal communities

Indigenous Guardians

"Guardians programs transform lives and communities. Reconnecting with culture, healing from trauma and feeling pride in identity — all of it is rooted in our relationship with the land and our cultural responsibility to look after it. Guardians are on the ground, sustaining these values."

– Valérie Courtois, Director, Indigenous Leadership Initiative.

The actions listed above build on previous efforts including:

- providing $1.3 billion in Budget 2018 for nature conservation, which leveraged additional funding from private and philanthropic sources, to create protected areas on provincial, territorial, municipal, and Indigenous managed lands

Figure 1. Terrestrial and marine protected areas and other effective area-based conservation measures (OECMs) in Canada as of December 2020

Data sources: Conservation Areas Reporting and Tracking System (CARTS) (2010), Canadian Protected and Conserved areas Database (CPCAD), and Registre des aires protégées au Québec (2021)

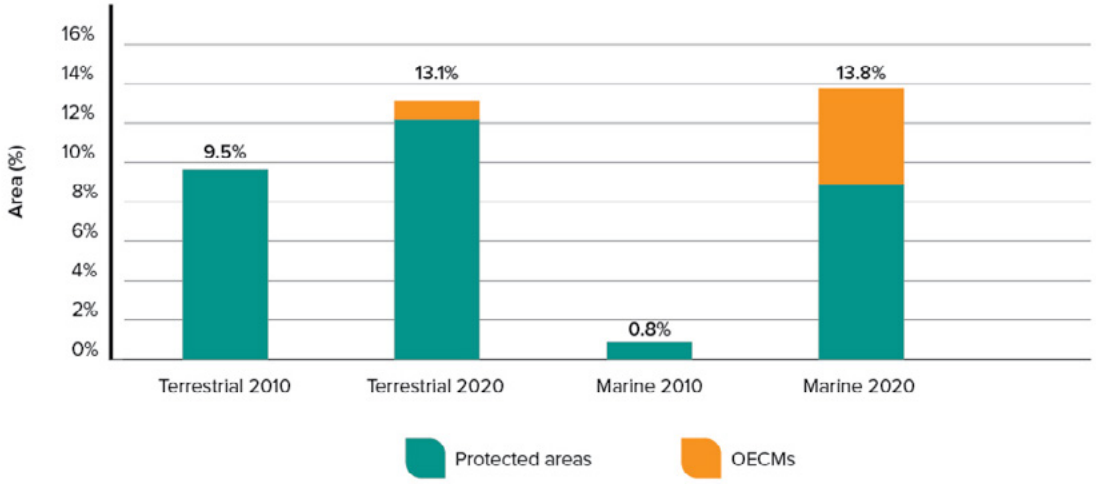


Figure 2. Increase in Canada's marine protected area and OECM coverage (km²) from 2010 to 2020

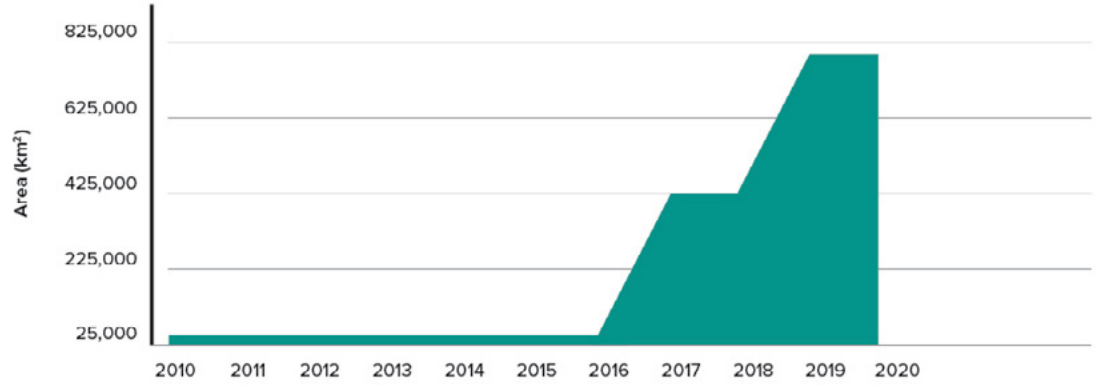
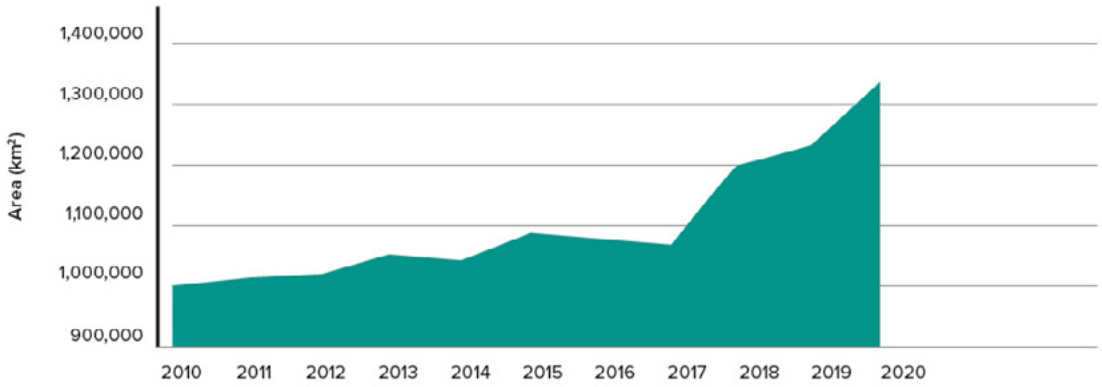


Figure 3. Increase in Canada's terrestrial protected area and OECM coverage (km²) from 210 to 2020



Figures adapted from Canadian Parks and Wilderness Society (CPAWS), 2021.
The Grades Are In: A Report Card on Canada's Progress in Protecting Its Land and Ocean

BEATING PLASTIC POLLUTION

Plastics litter our beaches, parks, streets, and shorelines. Their harmful impacts on nature and wildlife must be addressed.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- added "plastic manufactured items" to Schedule 1 of the *Canadian Environmental Protection Act*, which is an important step to support the Government's plan to ban plastic checkout bags, straws, stir sticks, ringed beverage containers, cutlery and foodservice ware made from plastics that can not be easily recycled
- invested an additional $10 million to the Sustainable Fisheries Solutions and Retrieval Support Program, also known as the "Ghost Gear Fund". "Ghost gear" is commercial fishing gear that has been abandoned, lost, or discarded and is estimated to be up to 70 percent of the plastic waste, by weight, in our oceans

The actions listed above build on previous efforts including:

- prohibiting the manufacture, import and sale of toiletries containing plastic microbeads
- working with provinces and territories to make producers responsible for the plastic waste that their products generate, as part of a comprehensive plan to move to zero plastic waste by 2030 which will keep plastics out of our environment and in our economy
- investing $5 million in education and awareness-raising activities, citizen science, and community projects and clean-ups to help mobilize and engage Canadians to reduce plastic waste and pollution
- committing $100 million to help developing countries prevent plastic waste from entering the oceans, address plastic waste on shorelines, and better manage existing plastic resources
- investing $19 million to support Canadian innovators to develop solutions to through Plastics Innovation Challenges such as finding sustainable alternatives to plastic packaging

> **Plastic innovation challenge**
>
> With the support of funding from the plastics innovation challenge, Axipolymer Inc., based in Montreal, will create a recyclable multi-layer film that can be used for food packaging, GreenMantra Technologies from Brantford, will transform polystyrene insulation waste into new insulation, and MgO Systems from Calgary will use PVC waste from construction to produce new insulating materials.

CREATING RESILIENCE IN CANADA

CLIMATE CHANGE ADAPTATION

Canada's climate is warming approximately twice as fast as the global average, and more than three times the global average in Northern Canada. The impacts of climate change, from flooding to coastal erosion, dangerous heatwaves and wildfire, pose a threat to Canadians' health, wealth, and safety.

It also puts Canada's infrastructure at significant risk, generating economic costs that must be shouldered by Canadians. For example, over the past ten years, the average annual insurance payouts related to extreme weather in Canada have more than quadrupled to $1.8 billion. The uninsured losses are even higher—approximately three to four times that amount.

While the Government of Canada moves forward with unprecedented investments in climate change mitigation, we have also accelerated efforts to address climate change adaptation across the country.

Since the launch of Canada's Strengthened Climate Plan in December 2020, the Government of Canada has:

- invested an additional $1.4 billion toward the Disaster Mitigation and Adaptation Fund (DMAF) to further support projects such as wildfire mitigation activities, rehabilitation of storm water systems, and restoration of wetlands and shorelines.

    - Established a Natural Infrastructure Fund to support natural and hybrid infrastructure projects and help to improve well-being, mitigate the impacts of climate change, and prevent costly natural events
- renewed the Standards to Support Resilience in Infrastructure Program, continuing work to update standards and guidance in priority areas such as flood mapping and building in the North.
- worked with provinces and territories to complete flood maps for higher-risk areas
- enhanced wildfire preparedness in Canada's National Parks and support increased mapping of areas in Northern Canada at risk of wildfires
- better supported First Nations and Inuit as they manage the health impacts of climate change, such as access to country food, impacts of extreme weather events, and mental health impacts of climate change on youth
- invested $1.9 billion over five years, on a cash basis, starting in 2021–22, to Public Safety Canada to support provincial and territorial disaster response and recovery efforts
- advanced early engagement with partners and stakeholders on the development of Canada's National Adaptation Strategy, which the Government committed to developing in A Healthy Environment and A Healthy Economy
    - the strategy builds on existing work to help Canada respond to the reality of climate change by bringing together and building on the resources, knowledge and expertise of Canada's adaptation community
- it provides an opportunity to expand upon the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) to unite all levels of government, Indigenous Peoples, municipalities, private companies, academia, civil society, youth, and Canadians in a whole-of-society approach to climate change adaptation
- dedicated $4.4 billion to the Canada Mortgage and Housing Corporation for interest-free loans up to a maximum of $40,000 to help Canadians complete deep home retrofits for energy efficiency and climate resilience protect their homes from climate risks. Eligible climate resilience measures could include flood proofing basements or installing energy-efficient heat pumps to keep homes cool in the summer amid increased heat waves

The actions listed above build on previous efforts including:

- ongoing efforts to develop a national flood insurance program
- funding 363 projects through the National Disaster Mitigation Program which aims to reduce the impacts of natural disasters on Canadians by focusing on investments which address recurring flood risks and costs and advancing work to facilitate a private residential flood insurance market in Canada
- investing an initial $2 billion toward the Disaster Mitigation and Adaptation Fund (DMAF) which has funded 68 projects in communities across the country to date

Rehabilitating city shorelines

Through the Disaster Mitigation and Adaptation Fund, the Government of Canada is supporting a project in Montreal to rehabilitate and secure 10 kilometres of city shoreline using bioengineering-inspired techniques, such as planting shrubs and vegetation. This will help manage the impacts of erosion and protect shoreline ecosystems and communities. The work targets five major parks: the Cap-Saint-Jacques and Bois-de-l'Île-Bizard areas of Grand parc de l'Ouest; the Île-de-la-Visitation nature park; Parc de la Promenade-Bellerive; René-Lévesque park; and the former Lachine pleasure boating port.

USING DATA TO DRIVE ADAPTATION DECISIONS

Successful adaptation planning requires robust, decision-useful climate change data – and then integrating this data into decision-making. In addition to establishing the Canadian Centre for Climate Services, the Government has led a series of national assessment reports—Canada in a Changing Climate—to provide an up-to-date synthesis of knowledge of how climate change risks affect the country.

To support this data-driven approach, the following measures have been taken:

- in June, the Government released a comprehensive National Issues Report which details the extent to which Canadian communities of all sizes are experiencing the impacts of climate change and which is providing a comprehensive analysis upon which Canada's first-ever National Adaptation Strategy is being developed
- the recently launched Sustainable Finance Action Council includes a mandate to support the government's priorities on resilience and adaptation and has been requested to work on climate data and analytics to ensure that both public and private sector expertise is brought to bear to ensure resilience
- through the Climate Resilient Buildings and Core Public Infrastructure Initiative, Canada is also integrating future climate data and considerations into design of public infrastructure to drive climate resilience
    - in November 2020, future-looking climate data was published that includes temperature, precipitation and wind data, based on over 660 locations across Canada to inform building and infrastructure codes and standards

CANADA'S PARTNERSHIP WITH INDIGENOUS PEOPLES

The Government recognizes that Indigenous climate leadership must be a cornerstone of Canada's climate actions and is partnering with First Nations, Inuit and Métis to set an agenda for climate action and a framework for collaboration.

Since the release of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- passed the *Canadian Net-Zero Emissions Accountability Act* which, among other things:
  - requires the Minister of Environment and Climate Change to seek input from Indigenous peoples based on the principles of UNDRIP, take in consideration the knowledge of Indigenous Peoples, and provide Indigenous Peoples with the opportunity to make submissions and;
  - commits, in the preamble, to advance the recognition-of-rights approach reflected in section 35 of the Constitution Act, 1982, and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), as Canada charts its path to get to net-zero by 2050
- tripled the net fuel charge proceeds available to Indigenous governments in federal backstop jurisdictions to ensure putting a price on pollution benefits Indigenous communities. These proceeds will be returned through co-developed solutions
- started to develop Canada's first National Adaptation Strategy, working directly with Indigenous peoples

In 2016, the Prime Minister along with the leaders of the Assembly of First Nations, Inuit Tapiriit Kanatami and the Métis National Council established three distinct, senior-level bilateral tables to support self-determination and enable Indigenous-led climate solutions.

The partnerships built through the bilateral tables have led to:

- investments of almost $800 million to support Indigenous-led projects, in support of adaptation planning, clean energy, health, infrastructure, climate monitoring, and more
- adjustments to the Low-Carbon Economy Fund to provide additional support for Indigenous projects that cut emissions

> **Investing in Cowessess First Nation**
>
> Cowessess First Nation in Saskatchewan is a leader in the clean energy transition. By installing solar panels on five of its community-owned buildings with the support of $633,000 in funding from the Government of Canada's Low Carbon Economy Fund, Cowessess First Nation will see a cumulative reduction of about 6,500 tonnes of greenhouse gas emissions - equivalent to taking approximately 2,000 cars off the road for one year. With an additional $5.2 million from the Investing in Canada fund, the First Nation is building the Awasis solar panel grid, which will contribute 10 megawatts—enough to power approximately 10,000 homes—to the provincial power grid.

- improvements to the Clean Energy for Rural and Remote Communities program, such that the program now supports capacity building, training, skill development and knowledge dissemination to help communities move to cleaner sources of power
- a commitment to improve Indigenous peoples' access to the Disaster Mitigation and Adaptation Fund

SUPPORTING COMMUNITIES TO CLEAN ENERGY SOURCES

There are 292 remote communities and industrial sites across Canada that are not connected to the North American grid. Almost 200 of these are communities that rely completely on diesel for heat and power and collectively consume over 680 million litres of diesel per year. The vast majority of the diesel reliant communities are Indigenous, or have significant Indigenous populations. The Government is taking action to help communities move off diesel and onto cleaner sources of energy—which has health, climate and job creation benefits.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- announced funding for $40.4 million over three years in Budget 2021, starting in 2021-22, to support feasibility and planning of hydroelectricity and grid interconnection projects in the North, such as the proposed Atlin Hydro Expansion Project in Yukon and the Kivalliq Hydro-Fibre Link Project in Nunavut
- announced additional funding for $36 million over three years in Budget 2021, starting in 2021-22, for the Strategic Partnerships Initiative program to build capacity for local, economically-sustainable clean energy projects in First Nations, Inuit, and Métis communities
- announced that the Canada Infrastructure Branch (CIB) is investing $170 million in the Oneida Energy Storage LP - a partnership between NRStor Inc and Six Nations of the Grand River Development Corporation - and one of the world's largest clean energy storage projects. This project will create internship opportunities for Six Nations community members and result in training and employment opportunities

The actions listed above build on previous efforts including:

- supporting the transition of diesel-reliant Indigenous communities onto clean energy through over 150 renewable energy and capacity building projects through the Indigenous Off-Diesel Initiative and further promoting clean energy in Indigenous and remote communities through the Clean Energy for Remote and Rural Communities program, with $220 million invested in 88 projects to date—90 percent of which are in or for Indigenous communities
- supporting over 50 large-scale initiatives and the creation of more than 200 successful partnerships in various sectors, benefiting over 400 Indigenous communities and organizations, through the *Strategic Partnerships Initiative*

INDIGENOUS LEADERSHIP IN LAND CONSERVATION

Indigenous peoples and their ancestors have long been stewards and managers of the land and waters, and leaders in ecosystem conservation in Canada. Indigenous peoples have consistently been responsible for much of the progress that Canada has made since 2015 in land conversation.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has

- committed $2.3 billion over five years in Budget 2021 to protect more nature across Canada, including through:
  - additional funding to develop additional Indigenous Conserved and Protected Areas (IPCAs);
  - additional resources for Indigenous led efforts to address species at risk concerns; and
  - additional support for Indigenous Guardians programming, which enables Indigenous communities to act as the eyes and ears on the ground by monitoring ecological health, maintaining cultural sites, and protecting sensitive areas and species

The actions listed above build on previous efforts including:

- investments in more than 70 Indigenous Guardians projects to provide Indigenous peoples with greater opportunity to exercise responsibility in the stewardship of their traditional lands, waters, and ice
- investments that are supporting the development of 30 IPCAs and 25 additional projects aimed to enable planning and capacity building needed to establish IPCAs
  - new IPCAs such as Edehzhie, Qat'muk, Thaidene Nene, Arqvilliit and Peel Watershed, are some examples

> **Indigenous leadership in protecting lands**
>
> The Edéhzhíe Protected Area, a co-managed partnership between the Dehcho First Nations and the Government of Canada, was the first of four Indigenous protected and conserved areas established under the Government of Canada's Canada Nature Fund. Edéhzhíe is an important area for flora and fauna, as well as a spiritual gathering place for Dehcho and Tłı̨chǫ Dene with at least 73 vascular plant families, representing 537 species.

DEMONSTRATING INTERNATIONAL LEADERSHIP

Climate change is a global challenge that requires global solutions and Canada occupies a unique position in this challenge. As an Arctic nation that is warming at twice the rate of the rest of the world, we understand the importance of ambitious collaboration. We are also both an advanced economy with emissions that we must bring down and a country that is biodiversity rich but still enjoys large wild spaces containing intact ecosystems and large carbon stores.

Canada has a responsibility to take a leadership role through bold action to reduce greenhouse gas emissions and to address declines in biodiversity, and Canada is taking action.

SUPPORTING AMBITIOUS CLIMATE ACTION ABROAD TO ACHIEVE A NET-ZERO AND NATURE POSITIVE WORLD

Under the Paris Agreement, 2020 was meant to be a year of collective action and ambition. The COVID-19 pandemic changed this as governments reoriented themselves to pandemic response and prioritized actions required to protect their citizens.

However, as the world looks to emerge from the pandemic, Canada is part of a growing consensus that the world must build back in a manner that addresses critical environmental concerns and ensures a sustainable future for the planet.

Since the launch of Canada's strengthened climate plan in December 2020, the Government of Canada has:

- joined 39 other world leaders at the April 2021 Leaders Summit on Climate in setting emission reductions on the pace required globally to keep the goal of limiting warming to 1.5 degrees Celsius with reach. These nations account for more than half the world's economy

- announced a doubling of Canada's climate finance to $5.3 billion over five years, including increased support for adaptation, as well as nature and nature-based solutions, to help developing countries build domestic capacity to take climate action, build resiliency, and reduce pollution
- entered into a 2030 Nature Compact with the Leaders of all G7 countries, committing to conserve and protect at least 30 percent of global and domestic land and ocean by 2030
- co-hosted the first-ever Powering Past Coal Alliance Global Summit with the United Kingdom to increase momentum in phasing-out coal fired electricity around the world. The Powering Past Coal Alliance was co-founded by Canada and the UK in 2017 to bring together governments and the private sector to accelerate the phase-out of unabated coal power. Since then, the coalition has grown to more than 120 members, including 36 countries from virtually every corner of the globe, 36 subnational governments, and 51 organizations
- committed, at the G7 Leaders' Summit, to phase out new direct government support for international carbon-intensive fossil fuel energy as soon as possible, with limited exceptions, consistent with an ambitious climate neutrality pathway, the Paris Agreement, 1.5°C goal and best available science

ADVANCING THE CLIMATE AGENDA

In addition to enhancing our own targets and climate finance internationally, Canada has also led initiatives which galvanizes international climate action.

Among other initiatives, Canada's actions have included:

- delivering on its commitment to provide $2.65 billion over five years to support international climate efforts of developing countries, including the poorest and most vulnerable
  - to date, the programs and projects supported are expected to have reduced 222 million tonnes of GHG emissions, helped at least 5.9 million people adapt to the effects of climate change, and mobilized important climate finance contributions from the private sector
- co-Chairing the Global Methane Initiative, an international partnership of 45 partner countries and over 1,300 project network members aimed at reducing methane pollution
  - domestically, Canada has some of the strongest federal methane regulations in the world, which is projected to cut methane emissions by almost half by 2025
- continuing to advocate for a global price on carbon pollution
  - carbon pricing is the most cost-effective tool to reduce emissions, and it will be more effective if more countries adopt it
- continuing to deliver on Canada's G20 commitment to phase-out all inefficient fossil fuel subsidies by 2025, including by working with Argentina on a peer review of fossil fuel subsidies
- Canada has already eliminated eight tax breaks for the fossil fuel sector

> **Canadian leadership on pricing carbon**
>
> Recent analysis by the International Monetary Fund (IMF) shows that, if the G20 adopted even half of the incremental carbon pricing policies that Canada has committed to, they would nearly triple their emissions reduction pledges under the Paris Agreement.

SUPPORTING NATURE-BASED SOLUTIONS GLOBALLY

The actions listed above build on previous efforts including:

- preventing biodiversity loss by setting a target to protect 30 percent of lands and oceans by 2030. As part of the High Ambition Coalition for Nature and People we are also among the countries helping to build support for this target internationally
- hosting the offices of the global Convention on Biological Diversity and co-chairing the global negotiations for a new global framework for protection and sustainable use of biodiversity
- launching the Ocean Plastics Charter, which outlines concrete actions to eradicate plastic pollution and recognizes the need for urgent action to address the devastating impacts of marine litter on the health and sustainability of our oceans, seas, coastal communities, and ecosystems
    - as of June 2021, the Charter has been endorsed by 27 governments and over 70 businesses and organizations. The targets and objectives of the Charter can form an important basis in support of negotiations towards a new global agreement on plastics
- committing $7.5 million as one of five countries supporting the Global Commission on Adaptation (GCA) to accelerate action on climate change adaptation globally.

NEXT STEPS

Like a high-speed camera shutter, this document takes a snapshot in time of the rapidly accelerating economic transition that is required to address climate change while ensuring the benefits accrue to every region of Canada. The picture will change again in a week, a month, a year from now. The transition to a cleaner, more sustainable yet prosperous economy is a priority that will require sustained effort over the years and decades ahead.

Canada's new 2030 emissions target under the Paris climate agreement is an ambitious increase over the previous one. It is science-aligned and reflects both the scale of the challenge and of the economic opportunity ahead for Canadians.

The only way to achieve our 2030 goal and the longer term goal of net zero by 2050 for Canada to keep innovating, strengthening, and building on existing measures. So while current measures and investments put us on a trajectory towards Canadians' 2030 goal, we can't stop here.

The past many months of pandemic have revealed a collective capacity for social reflection, science and policy innovation, and public investment that can and must be harnessed to meet the next great global crisis —a changing climate. Across the world, significant investments and economic transformation have taken place over the past 16 months that defied prediction.

Such energy and urgency must now be harnessed to drive Canada's environmental ambition. And federal leadership is only part of Canada's story. Many provinces have committed to deep greenhouse gas emissions reduction targets—for both 2030 and 2050—and we encourage all to commit to such goals and

to develop comprehensive plans to reach these targets. Additional provincial and territorial measures can build on and supplement measures being taken by the federal government enabling Canada to collectively move even further and faster.

Decisions by investors and institutions in the private and financial sectors will also be critical to driving and accelerating reductions as companies move to capitalize on the growing demand for low-carbon products and services. Already more than 120 governments, 400 sub-national governments and 1,000 corporations around the world have committed to net-zero targets by 2050, a trend that continues to gain momentum.

In a North American context, Canada now has ambitious partners at national and sub-national levels - providing opportunities for regulatory harmonization on ambitious climate action which could also help advance emissions reductions as well as technology development and deployment.

The list of initiatives, actions and innovations neither begins nor ends here.

Canada’s comprehensive climate and nature plans and its Nationally Determined Contribution emissions target are not simply words on pages. They effectively represent a mission statement. A promise to the world, to all Canadians, and to Canada’s youth in particular that Canada is committed to ensuring that a carbon neutral, nature positive, sustainable and prosperous future remains very much within our power and our reach.