



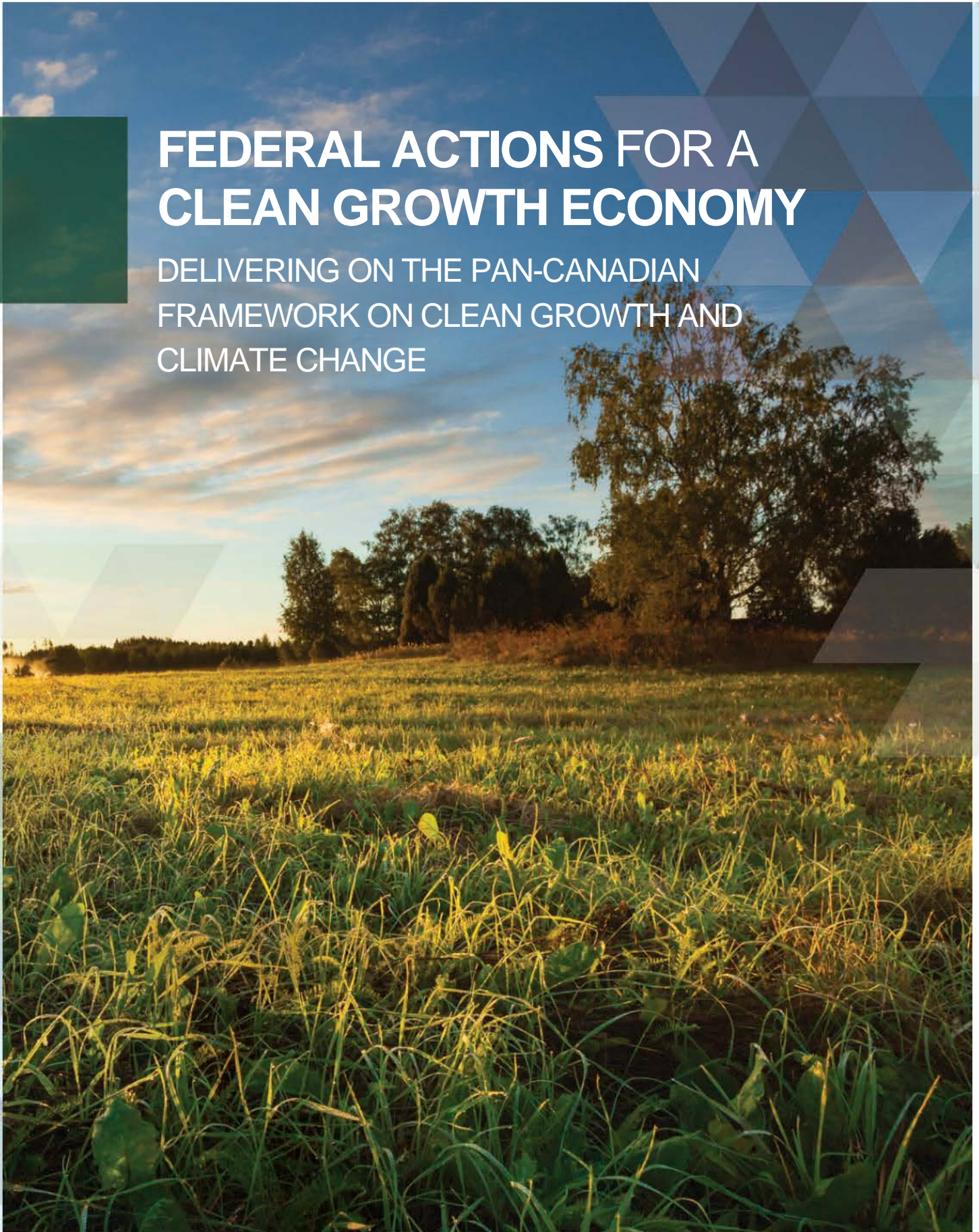
Government
of Canada

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Canada

FEDERAL ACTIONS FOR A CLEAN GROWTH ECONOMY

DELIVERING ON THE PAN-CANADIAN
FRAMEWORK ON CLEAN GROWTH AND
CLIMATE CHANGE



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INTRODUCTION

CANADA AND THE CLEAN GROWTH CENTURY

Much has changed since Canada was founded almost 150 years ago. Our curiosity, intelligence, and determination have led us to build thriving communities, realize the potential of our natural resources, and create innovations that our ancestors could not have imagined.

But today, we confront an urgent challenge—a challenge that requires us to act quickly. Without immediate action, it will affect how and where we live, our quality of life, and our collective prosperity.

That challenge is climate change.

Month over month, year over year, decade over decade, temperatures continue to rise, heat records are broken and the effects that this has on the earth are troubling. We see the overwhelming scientific evidence of climate change, as well as its devastating impact. Canada is not immune.

In Alberta and across the West, we see bigger wildfires that last longer than ever before. We see droughts in the Prairies and floods in the Atlantic provinces. Along Prince Edward Island, we see coastal erosion that is quite literally shrinking the province. And, in the Arctic—where average temperature has increased at a rate of nearly three times the global average—ice cover is rapidly thinning, putting lives and traditions at risk. Indigenous Peoples and northern communities are particularly vulnerable and disproportionately affected.

The impacts of climate change also come with huge financial costs. Insurance claims in Canada from severe-weather events averaged \$373 million a year from 1983 to 2004. In the past decade, that amount tripled to \$1.2 billion a year. By 2050, the costs of climate change could rise to \$21 billion to \$43 billion per year, according to estimates by the National Round Table on the Environment and the Economy in 2011.

Beyond a doubt, climate change is a challenge that must be tackled head-on and tackled today—by all of us.

This challenge also brings opportunity—the opportunity to build a more sustainable and prosperous future for our planet, and for our children and grandchildren.

In November 2015, 195 countries adopted the historic Paris Agreement. For the first time, countries came together and agreed that each country must do its part to reduce carbon pollution and limit global average temperature rise to well below two degrees Celsius above pre-industrial levels. The Canadian delegation included the Prime Minister and Premiers, Indigenous leaders, business and labour representatives, environmentalists, faith groups and youth from across the country—all united in the need to take action to address climate change.



A year later, it is clear that the commitment to climate action goes well beyond governments. Most strikingly, businesses around the world also recognize that the historic shift to clean energy is inevitable. They understand that the clean growth economy represents a future market worth trillions of dollars.

It is clear that the Paris Agreement sent a strong signal to the world and to the economic markets. **The 21st century will be the clean growth century.**

The proposition is clear: Canada can either act now – and take advantage of this global opportunity – or resign ourselves to being left behind.

And overwhelmingly, Canadians want us to take action to protect our climate and take advantage of the clean growth century.

The majority of Canadians understand that Canada—and the world—is moving to a low carbon future. They understand that this is a transition and that it will not happen overnight. They recognize that Canada’s resource wealth is still needed to fuel the clean growth economy. And they want to ensure that their family and all Canadians benefit from this transition.

Canadians expect pragmatic, flexible, and smart climate action.

Adopted on December 9, 2016, the Pan-Canadian Framework on Clean Growth and Climate Change is a plan to grow our economy while reducing emissions and building resilience to adapt to a changing climate. It is a blueprint to spur innovation and create good jobs across the country. It is fair and flexible, and recognizes the unique situation of provinces and territories across the country.

It is the result of a conversation with Canadians—young and old; scientists and environmentalists; members of business and labour organizations, faith groups and civil society—through town halls, roundtables, working groups and our online consultations. Indigenous Peoples also shared their knowledge and recommendations for climate action.

Pricing carbon pollution is central to this Framework and will reduce emissions and foster innovation—that is why it has support from business leaders across all sectors.

Carbon pricing is complemented with actions to reduce emissions and adapt to climate change across all sectors—from industry, to buildings, transportation and agriculture. This means using clean electricity to power our homes, workplaces, vehicles and industries, and using energy more efficiently. It means more resilient infrastructure and ecosystems that can better withstand changes to the climate. It means expanding protected areas and parks, and other conservation measures that will store carbon and foster adaptation to climate change.

This is a comprehensive plan. Combined, all of these measures will significantly reduce our country's emissions, make us more resilient to the impacts of climate change, foster innovation, grow our economy and create good jobs for the middle class.

Acting on climate change will make Canada more efficient and competitive. It will allow us to take advantage of the global market for low-carbon goods and services already



worth \$5.8 trillion and growing by 3% per year. Canadian innovations and solutions are already being exported abroad and deployed around the world. We are creating new markets and partners for Canadian businesses, while supporting global action to reduce emissions.

Prime Minister Wilfred Laurier once said, “It is often the mistake of nations that they do not apprehend fully the necessities of the situation. They fail in boldness.” As we stand at the dawn of the clean growth century, Canada will not only be bold – we will lead.

And we know these actions will leave a lasting legacy for our children and grandchildren: The legacy of a strong and clean economy, prosperous and diverse communities, clean air and a healthy environment.

The Honourable Catherine McKenna, P.C., M.P.
Minister of Environment and Climate Change



HIGHLIGHTS

For the first time, provinces, territories and the federal government have agreed to take collective action to address climate change. Together, we have developed the Pan-Canadian Framework on Clean Growth and Climate Change.

It has four pillars: pricing carbon pollution, taking action in each sector of the economy, adapting to climate change, and supporting clean technologies, innovation and job creation.

Foundational to these pillars is the commitment of our governments to continue to recognize, respect and safeguard the rights of Indigenous Peoples.

The Pan-Canadian Framework also commits to report regularly and transparently to Canadians on progress.

The Government of Canada is making investments and taking action across all four of these pillars.

Pricing carbon pollution

Pricing carbon pollution is a cornerstone of Canada's climate change plan. It will reduce greenhouse gas emissions, drive innovation, and encourage Canadians and businesses to pollute less. It will also send a clear signal to industry and investors that we are moving to a low-carbon future.

The Government of Canada will work with provinces and territories to:

- Ensure carbon pricing systems are implemented throughout Canada by 2018.
- Find solutions, in collaboration with the territories, and with Indigenous Peoples, that address their unique circumstances.
- Establish the approach to the review of carbon pricing, including expert

assessment of stringency and effectiveness that compares carbon pricing systems across Canada, and report back to First Ministers in 2020 and 2022.

- As an early deliverable, assess best practices for addressing the competitiveness of emissions-intensive trade-exposed sectors.

Homes and buildings

We spend the majority of our lives in buildings. We can improve them and reduce emissions by making our buildings more efficient. This will also make them more comfortable and healthy, and save Canadians money on energy bills. We can design our buildings to use and even generate clean electricity. Improving our homes and buildings will also create new construction jobs and will encourage Canadian businesses to innovate.

The Government of Canada will work with provinces and territories to:

- Develop more energy efficient building codes for new and existing structures and work toward labelling energy use in buildings.
- Use funds from the \$2 billion Low Carbon Economy Fund and green infrastructure investments to help interested provinces and territories expand their efforts to improve building energy efficiency.
- Set new standards for heating equipment and other key technologies.
- Collaborate with Indigenous Peoples as they improve the energy efficiency of their buildings.

Transportation

Nearly a quarter of Canada's greenhouse gas emissions come from transportation. We can cut these emissions, while also making our

cities healthier and giving Canadians more convenient transportation options. We can do this by using cleaner fuels, putting more zero-emission vehicles on the road, improving public transit, and making our transportation system run more efficiently.

The Government of Canada will work with provinces and territories to:

- Continue cutting emissions from cars, trucks and transport vehicles including through the development of new efficiency standards for tires.
- Develop a Canada-wide strategy for zero-emission vehicles, and invest in charging and natural gas and hydrogen fuelling infrastructure.
- Invest in public transit
- Develop a clean fuel standard.

Electricity

Canada already has one of the cleanest electricity systems in the world, and has set a goal of increasing the share of clean electricity we produce from 80% to 90% by 2030. This clean electricity will power more of our homes, businesses, cars and industry.

The Government of Canada will work with provinces and territories to:

- Accelerate the phase out of traditional coal-fired electricity by 2030.
- Invest in renewable energy such as wind and solar.
- Invest in transmission lines between provinces and territories, as well as energy storage and “smart grid” technologies to make better use of renewable energy.
- Work in partnership with Indigenous Peoples and northern and remote

communities to reduce their reliance on diesel.

Industry

Canada’s industries are the backbone of our economy. From oil and gas production to pulp mills to steel and aluminum manufacturing, our industries produce quality products for use at home and abroad. Industry is also the biggest source of greenhouse gas emissions in Canada. We can help our industries cut their emissions by switching to cleaner fuels, using energy more efficiently and installing cutting-edge technologies.

The Government of Canada will work with provinces and territories to:

- Reduce methane emissions from the oil and gas sector by 40-45% by 2025.
- Develop regulations to phase down the use of hydrofluorocarbons.
- Help industries improve their energy efficiency.
- Invest in developing and deploying new clean technologies.

Forestry, Agriculture and Waste

Canada’s forests, wetlands and agricultural soils absorb and store carbon. Enhancing these “carbon sinks” is essential for helping us reach our climate goals, in particular over the longer term. The forestry and agriculture industries also produce emissions, and so does municipal waste.

The Government of Canada will work with provinces and territories to:

- Protect and enhance forests, wetlands and agricultural lands, which act as carbon sinks.
- Encourage greater use of wood products in construction.

- Facilitate expanded production of renewable fuels and bioproducts.
- Advance innovative forestry and agricultural management practices and technologies that help reduce emissions.

Adaptation and Climate Resilience

Canadians are already feeling the impacts of climate change. Permafrost is thawing, coastlines are eroding, invasive species are increasing, and we're seeing more frequent and severe wildfires, droughts, and floods. Reducing emissions and building a cleaner economy is one part of the solution. But we must also prepare and adapt.

The Government of Canada will work with provinces and territories to:

- Help translate scientific information and Traditional Knowledge into action by establishing a Canadian centre for climate services and by building regional capacity and adaptation expertise.
- Invest in climate-resilient infrastructure and integrate climate resilience into building codes and standards.
- Invest in protecting health and well-being, including supporting healthy Indigenous communities.
- Support vulnerable regions by investing in infrastructure, strengthening capacity in the North, supporting community-based monitoring, and advancing research, monitoring, and information for coastal regions.
- Work to mitigate hazards and disasters by investing in infrastructure and advancing efforts to protect against flood damage.
- Work with Indigenous Peoples, including through community-based initiatives, to build capacity for

adaptation action and address the specific risks they face due to a changing climate.

Clean Technology, Innovation and Jobs

Canada has an opportunity to be a leader in developing clean technologies. New technologies can help us reduce emissions while also creating jobs and growing our economy for future generations.

The Government of Canada will work with provinces and territories to:

- Invest in research and technology development in areas with the potential for substantial emission reductions.
- Help companies commercialize their products and grow.
- Lead by example by purchasing clean technologies for government operations.
- Work with northern, remote and Indigenous communities to adopt and adapt clean technologies to their needs.

Parks and Protected Areas

Canada has 46 national parks and one national urban park that span diverse ecosystems across the country. The Government of Canada is taking action to strengthen our marine and terrestrial areas and the biodiversity within them. Healthy, biologically diverse ecosystems are more resilient to climate change and can also help protect against climate change impacts, such as flooding and drought. Parks and protected areas also act as carbon sinks. Preserving and enhancing these areas can help them absorb and store more carbon.

The Government of Canada will work with provinces and territories to:

- Protect 17 percent of its terrestrial areas and 10 percent of its marine areas by 2020.

International

Climate change is a global challenge and cannot be solved without international collaboration. Canada is working with countries around the world to demonstrate leadership and take global action on climate change.

The Government of Canada will work with provinces and territories to:

- Deliver on Canada's international climate-finance commitment of \$2.65 billion by 2020 to help the poorest and most vulnerable countries mitigate and adapt to climate change.
- Explore tools related to acquiring internationally transferred mitigation outcomes under the Paris Agreement.
- Engage international partners to ensure that trade rules support climate policy.



PRICING CARBON POLLUTION

REDUCING POLLUTION AND GROWING THE CLEAN ECONOMY

Taking Action

The Government of Canada will work with the provinces and territories to:

- Implement carbon pricing systems throughout Canada by 2018.
- Find solutions, in collaboration with the territories, and with Indigenous Peoples, that address their unique circumstances.
- Complete an interim report in 2020, which will be reviewed and assessed by First Ministers. As an early deliverable, the review will assess approaches and best practices to address the competitiveness of emissions-intensive trade-exposed sectors.
- Complete a full review of carbon pricing by 2022 to assess stringency, effectiveness and to compare systems across Canada.

Canada is taking action with our plan to price carbon pollution. In doing so, we can reduce our greenhouse gas emissions and send a clear signal to entrepreneurs, industry and investors that we are moving to a low-carbon future.

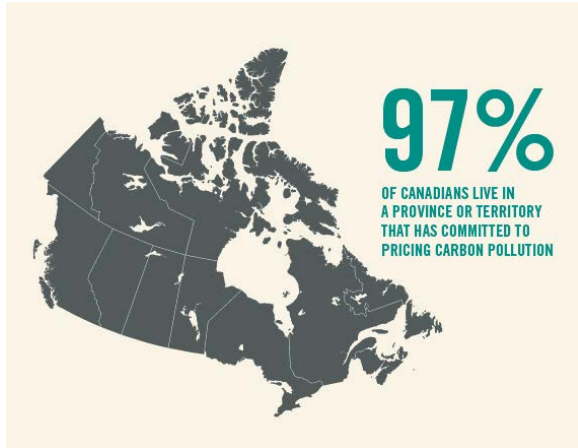
In fact, 97% of Canadians live in a province or territory that has committed to pricing carbon pollution. BC and Alberta use a carbon levy. Quebec and Ontario have cap-and-trade systems, where businesses need permits to emit carbon pollution, which they can trade amongst themselves under an overall cap. Quebec linked its system with California, and Ontario plans to join in 2018.

As outlined in the Government of Canada’s benchmark, there will be a price on carbon pollution throughout Canada by 2018. Each jurisdiction will design and implement its own carbon pricing system, either an explicit price on carbon pollution or a cap-and-trade system—one that works best for them.

The Government of Canada recognizes the unique circumstances of the territories, and of Indigenous Peoples, including high costs of living and of energy, challenges with food security and emerging economies. We will work with the territories, and with Indigenous Peoples, to find solutions that address their circumstances.

Provinces and territories will keep any revenues generated by pricing carbon pollution. They can use the revenues according to its needs, for example to support consumers, businesses or vulnerable groups. BC uses its revenue to cut taxes on consumers and businesses. Alberta recycles revenues to support consumers, small businesses and clean technology programs. Both Ontario and Quebec use revenues to support climate change programs.

Pricing carbon pollution makes good business sense. Many business leaders across all sectors support carbon pricing in Canada. More than two dozen Canadian companies have joined the World Bank’s Carbon Pricing Leadership Coalition – including mining companies and retailers, major oil companies and Canada’s five biggest banks – all supporting a price on carbon pollution. These companies understand that as the world moves towards a low-carbon economy, pricing carbon pollution will help Canadian businesses, investors and consumers make low-carbon choices. It will also drive innovation, and keep Canada competitive with other countries.



WHAT SUCCESS WILL LOOK LIKE

Jean and Lynn are business partners in Prince George, British Columbia. Their company makes electric power tools including chainsaws and snow blowers. They emphasize energy efficiency in designing, building and marketing their products. This saves them money and their brand becomes known for its power, durability and reliability. This helps them expand their sales globally. To keep up with demand they open a second, larger factory next door that is powered by geothermal energy, solar tiles and wind turbines.



HOMES AND BUILDINGS

SAVING MONEY AND MAKING OUR BUILDINGS MORE ENERGY EFFICIENT

Taking Action

The Government of Canada will work with the provinces and territories to:

- Develop a “net-zero energy ready” model building code, with the goal that provinces and territories adopt it by 2030.
- Develop a model code for existing buildings to help guide energy efficiency improvements during renovations, with the goal that all provinces and territories adopt it.
- Develop tools to support the aim of requiring labelling of building energy use by as early as 2019.
- Use funds from the \$2 billion Low Carbon Economy Fund and green infrastructure investments to help interested provinces and territories expand their efforts to improve building energy performance.
- Set new standards for heating equipment and other key technologies.
- Support Indigenous communities and governments as they improve the energy efficiency of their buildings.

We spend the majority of our lives in buildings. Our houses, offices, and community centres require heating, cooling, and lighting. In Canada, buildings produce 12 percent of our national emissions, mostly for space and water heating. If you add indirect emissions from using electricity, that share jumps to 17 percent. And in making them more energy efficient, they represent a big economic opportunity.



Construction is a multi-billion-dollar industry in Canada. When we make our homes and buildings more energy efficient – we also create more jobs. In Canada, every dollar the government spends on energy-efficiency programs can save Canadians as much as \$3 to \$5.

Our buildings will become much more energy efficient, use clean electricity, and even generate their own electricity. Well-designed, efficient buildings are comfortable and healthy – and they save Canadians money on energy bills.

The federal government will support improving the energy efficiency of our homes and buildings.

First, the Government of Canada will provide tools to make new buildings more energy efficient. It is feasible to design buildings that use as much energy as they could produce using renewable energy. These are known as “net-zero energy ready” buildings. Working with the provinces and territories, the federal

government will develop a building code that, when adopted by provinces and territories and used by builders, could enable all new buildings to be built “net-zero energy ready” by 2030.

We will also work with the provinces and territories to develop a retrofit code for existing buildings and work towards energy labeling to support retrofits. A code for existing buildings will help guide energy efficiency improvements that can be made when Canadians renovate their homes and buildings. In 2030, 75 percent of Canada’s buildings will be buildings standing today, so we must work to improve their energy efficiency.

Energy use labeling will allow homeowners to increase the value of their homes by showing the improvement in energy performance that results from investing in better insulation and more efficient heating and cooling systems.

The federal government will also set advanced efficiency standards for new heating equipment and other appliances, so homeowners save energy and money over time.

The \$2 billion Low Carbon Economy Fund and the government’s green infrastructure investments will support the transformation of our buildings sector. Through these funds, we will work with interested provinces and territories to support their efforts to help homeowners and businesses become more energy efficient.

Finally, we will work in partnership with Indigenous Peoples to enhance efficiency and combat climate change as we address the housing challenges in Indigenous communities. Together, we will make new buildings more efficient through improved building standards, while also increasing the efficiency of existing buildings. Indigenous Peoples have also identified the need to incorporate Traditional Knowledge and culture into building designs.

These actions will create good jobs, drive the development of new technologies, save Canadians money and help make homes, businesses and other buildings more comfortable, healthy and environmentally friendly. For Canada to thrive in the clean growth century, we need efficient and resilient buildings.

WHAT SUCCESS WILL LOOK LIKE

Amani wants to save money on energy to heat her home and help the environment. She can replace her drafty windows, insulate her attic and replace her water heater to lower her energy bill over time. She can also make sure that she hires contractors who follow the latest environmentally friendly building codes. She saves money and she’s helping Canada build a clean, sustainable future.

CLEAN TRANSPORTATION

MAKING OUR CARS CLEANER AND OUR CITIES HEALTHIER

Taking Action

The Government of Canada will work with the provinces and territories to:

- Continue cutting emissions from cars, trucks and transport vehicles through emissions standards, fuel-efficient tire standards, and requirements for fuel saving technologies.
- Reduce emissions in the rail, aviation, marine and off-road sectors by improving efficiency and supporting fuel switching.
- Develop a national strategy for zero-emission vehicles in collaboration with provinces and territories.
- Invest in charging and fuelling stations for zero-emission and alternative fuel vehicles.
- Invest in public transit.
- Develop a clean fuel standard.

Transportation currently represents 23 percent of Canada’s greenhouse gas emissions. Our federal actions in coordination with provinces and territories will set Canada on a path to significantly reduce emissions, and make transportation easier.

With smart and strategic investments in transportation, we will not only reduce carbon pollution, but we will create well-paying jobs, and improve our quality of life at home, at work, and in our communities.

Zero-emission vehicles (ZEVs), like electric cars and fuel cell vehicles are an important area to focus on. As they become more common and affordable each year, they will support the transition to a low-carbon transportation system and reduce pollution in our cities and towns.

The Government of Canada will help improve ZEV infrastructure by working with provinces and territories to invest in more charging stations so that more Canadian families can commute and travel longer distances in zero emission cars. And we will also develop a national strategy for zero-emission vehicles with the provinces and territories.



Many countries are already moving in this direction and ahead of us. In 2015, 10 percent of all new vehicle sales in the Netherlands came from EVs. And in Norway, it was double that at 22 percent.

In Canada companies are innovating and creating jobs in the clean transportation sector such as making zero-emission electric buses.

We will continue improving standards so that our vehicles burn less fuel and emit less pollution. For instance, we are creating fuel efficient tire standards, and we are working with provinces and territories to require the installation of technologies that reduce emissions from our heavy-duty vehicles. We will also work to cut emissions from our planes, trains and ships at sea. This will reduce air pollution and improve the health of Canadians, and saves money for families and businesses on fuel.

We will work with provinces, industry and other partners to develop a clean fuel standard that will stimulate innovation and further reduce pollution. A well-designed clean fuel standard will create more ways for families and business to save money and reduce pollution. By promoting low carbon fuels and alternatives like electricity, biogas and hydrogen, we will achieve the equivalent of taking 7 million vehicles off the road by 2030.

When we look around the world, nations are installing high-speed transit networks, investing in electric transportation, and encouraging their citizens to be active by biking and walking through cities. The alternative – traffic jams and polluted urban centers – is just not an option. This is why we announced an investment of \$25 billion to upgrade our public transit systems across the country over the next decade.

Canada is investing in clean and efficient transportation, and in doing so, is ensuring that Canadian families live in healthy and productive communities.

WHAT SUCCESS WILL LOOK LIKE-

REDUCING COMMUTE TIMES

Andrew and Renée live in Calgary and have two young girls, ages 7 and 10. Every morning, Andrew and Renée each spend more than 60 minutes in traffic while driving to work. Combined, that is two hours they could otherwise be spending with their two girls, coaching soccer, or chatting over breakfast and dinner. Strategic investments in better public transit will change this. Andrew and Renée will spend more time with their family and less time waiting in congested traffic.

ELECTRICITY

CLEAN ELECTRICITY POWERED BY THE SUN, WIND AND OUR RIVERS

Taking Action

The Government of Canada will work with the provinces and territories to:

- Phase out traditional coal-fired electricity by 2030, including through equivalency agreements.
- Set performance standards for natural gas-fired electricity generation.
- Invest in clean energy.
- Invest in transmission lines between and within provinces and territories.
- Invest in energy storage and “smart grid” technologies to build a modern electricity system.
- Work in partnership with northern, remote and Indigenous communities to reduce their reliance on diesel.

Across the country we power our homes, businesses, hospitals and schools with electricity. It heats some of our buildings in winter, cools our buildings in the summer, and lights our streets at night. Every day we use electricity to charge the cellphones and computers we use.

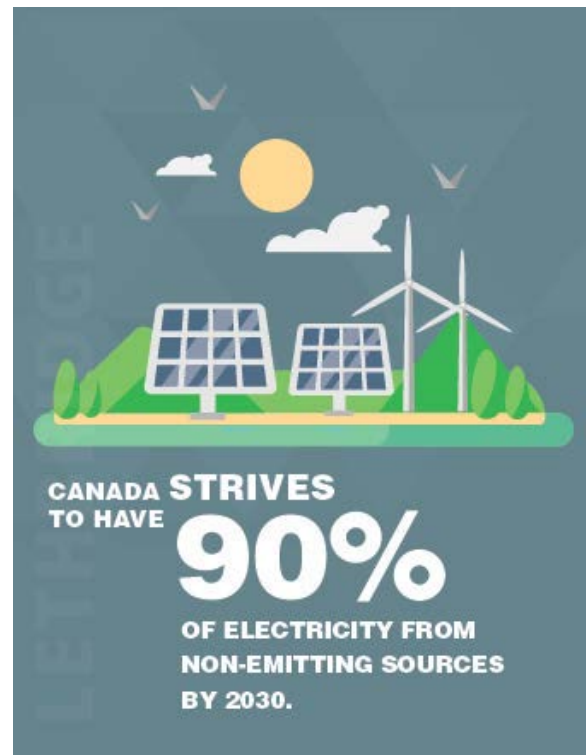
In Canada we are very lucky. We produce 80 percent of our electricity from non-emitting sources like hydro, nuclear, wind and solar. And we have set a goal of reaching 90 percent non-emitting electricity by 2030. This will not only make Canada healthier, but will drive our clean energy sector and create good jobs.

To accomplish this, the Government of Canada, in collaboration with provinces, territories and Indigenous Peoples, is taking bold action.

Canada will phase out traditional coal-fired electricity by 2030. This will have a positive impact on the health of Canadians. Air pollution is a major cause of respiratory illness and when we phase out the burning of coal it will result in fewer emergency room visits, and reduce the number of premature deaths each year.

As we phase out coal-fired electricity we are also making investments in clean energy research and innovation, and we are establishing a Canada Infrastructure Bank, which is expected to help finance renewable energy and electricity system projects.

Positive change is already happening. Wind capacity in Canada grew 15 times over the past decade, and will continue to grow. Wind turbines can be found sprouting from the plains of the prairies through to the Atlantic coast. Solar power is also growing rapidly.



In 2015, Canada was among the top ten countries in the world for added solar capacity. Canada is also building new innovative energy sources like geothermal and tidal energy. Nova Scotia is leading the way with its Cape Sharp Tidal project, the first tidal in-stream turbine in North America.

As we ratchet up our production of clean power we need to build it into our current electricity systems effectively. That is why we will work with provincial and territorial governments to expand energy storage and support “smart-grid” technology, which uses sensors and automation to modernize the flow of electricity through the grid, making electricity systems more reliable.

Some provinces have more clean energy than others, especially those with significant sources of hydroelectricity. The Government of Canada will work with provinces and territories to invest in transmission lines to link provinces and territories that have abundant clean electricity to those that don't.

Finally, many northern, remote and Indigenous communities in Canada are not connected to electricity grids, and instead rely on expensive and polluting diesel generation to heat and light their homes and buildings. We will work with these communities to invest in renewable energy projects, connect them to the grid, and help them reduce their reliance on diesel and create local economic opportunities. In fact, according to data compiled by the Indigenous Renewable Energy research project, there are more than 300 Indigenous clean-energy projects in more than 190 communities across Canada. This will continue to grow.

The clean energy sector has the potential to be a major source of jobs and leave a legacy of clean and healthy communities for future generations

WHAT SUCCESS WILL LOOK LIKE

Chantal is an active 12-year-old who loves to play soccer, but who must be careful, especially outdoors, because she suffers from asthma. Phasing out traditional coal-fired electricity and using more renewable energy to generate electricity will mean cleaner air for Chantal—and all Canadians. It will also help reduce the risks of climate change and create more jobs from local clean-energy projects. Looking ahead, Chantal and her parents will breathe much easier.

INDUSTRY

HELPING INDUSTRY RUN CLEANER AND MORE EFFICIENTLY

Taking Action

The Government of Canada will work with the provinces and territories to:

- Reduce methane emissions from the oil and gas sector by 40-45% by 2025, including through equivalency agreements.
- Implement regulations to phase down the use of hydrofluorocarbons.
- Help industries improve their energy efficiency.
- Invest in developing and deploying new clean industrial technologies in collaboration with provinces and territories.

Canada benefits from a strong and diverse industrial sector. It is the backbone of our economy, and it employs hundreds of thousands of Canadians from coast to coast to coast. From oil and gas production to pulp mills to steel and aluminum manufacturing, our industrial sector produces quality products for use at home and abroad.

Yet 37 percent of Canada’s national greenhouse gas (GHG) emissions come from industry, and there is a lot we can do to reduce these emissions.

Through changes to policy and targeted investment, Canada’s industries will run on cleaner fuels and electricity, improve their energy efficiency, and use cutting-edge technologies to reduce carbon pollution. These changes will help Canadian industry thrive during the clean growth century.

First, we must reduce emissions of methane and hydrofluorocarbons (HFCs). The Government of Canada is working with provinces and territories to reduce methane emissions from oil and gas operations by 40-45% by 2025, including through equivalency agreements that would allow provinces to implement their own regulatory regimes. The federal government has also introduced regulations to phase down the use of HFCs, which are used in air conditioners and refrigerators, and are potent GHGs – some being thousands of times more powerful than carbon dioxide.

Increasing energy efficiency is also a pillar of our clean growth strategy. Energy management systems help businesses track, analyze and improve their energy efficiency. Energy management systems, can be implemented quickly, produce results immediately, and will help save businesses money. The Government of Canada will take steps to increase the availability of these energy management tools and encourage their uptake with businesses.



In addition to increasing the amount of energy we save, there are also opportunities to change the type of energy we use. That is why Canada will make strategic investments in new clean technologies within industry. Some of today's technologies can help industries cut emissions and switch to clean fuels and electricity. The Government will launch consultations early in the new year with stakeholders, provinces, territories and Indigenous Peoples to develop a clean fuel standard that will encourage the industrial sector to use lower carbon fuels.

Over the longer-term, new technology breakthroughs will make even greater strides in cutting emissions. The right investments today can make our industries cleaner tomorrow. And by making these investments we will also drive innovation, helping Canadian businesses access global markets and attract foreign investment.

Canada's clean future includes internationally competitive businesses that lead the world in using new technologies to be efficient and productive and reduce emissions.

WHAT SUCCESS WILL LOOK LIKE

A wood pulp factory in Quebec is planning to use bark, sludge and wood residues—by-products of its operations—to produce energy to heat the factory. Any surplus energy produced will be used to generate electricity that can be sold back to Hydro-Quebec. Construction of this multi-million dollar project will generate 80 jobs, and the operation of the new equipment will create 15 full-time jobs at the factory. The cost of this project will be amortized over 15 years. These clean technology improvements will reduce the factory's greenhouse gas emissions by 40% and send 80% less wood by-product waste to landfills.

CLEAN TECHNOLOGY, INNOVATION AND JOBS

BUILDING INNOVATIVE TECHNOLOGIES FOR THE CLEAN GROWTH CENTURY

Taking Action

The Government of Canada will work with the provinces and territories to:

- Support research and technology development in areas with the potential for substantial emission reductions.
- Help companies commercialize their products and grow by building skills and leadership, supporting technologies that improve both competitiveness and environmental performance, and helping access international markets.
- Lead by example by purchasing clean technologies for government operations.
- Support Indigenous Peoples and northern and remote communities to adopt and adapt clean technologies to their needs.
- Collaborate with provinces and territories to align investments and establish a clean technology data strategy.

The world is starting to shift to cleaner ways of doing things – running industries with less energy, generating more wind and solar power, cutting down on waste. There is still a long way to go, but this shift is driving innovation and creating opportunity for a clean growth century.

Consider clean energy. In 2015, more than a quarter of a trillion dollars was invested globally in renewable power capacity – more than double the amount invested in new coal and gas

generation. That kind of investment is driving Canadian companies to think up new ways of making energy production cleaner, such as extracting carbon dioxide from the air.

By investing today in tomorrow’s new clean technologies, Canada can stay competitive, and in the process, create good jobs across the country.

We have an opportunity to be a leader in developing clean technologies. The global clean-tech market was approximately \$5.8 trillion in 2012, and growing by more than 3 percent each year. Countries that innovate will have a competitive advantage.

The Government of Canada is working with provinces and territories through the Pan-Canadian Framework to support clean growth and innovation.

From research and development, to demonstration of new technologies, to the adoption of clean technologies, governments will work together to support Canadians in the transition to a low-carbon economy. To be a leader in clean technology development will require early-stage technology development, establishing international partnerships, and encouraging “mission-oriented” initiatives to help generate innovative new ideas and create economic opportunities.



Canadian clean technology businesses will be supported with access to capital to bring their products and services to market. In partnership with provinces and territories, our natural resource industries will be key players in the clean growth economy, developing and adopting clean technologies that improve competitiveness and environmental performance. A “no-wrong door” approach will help ensure these firms have full and effective access to the suite of government programs and services available to support their commercial success.

We will also support the adoption of clean technologies across Canada in several ways, including through federal government procurement and by working with northern, remote, and Indigenous communities.

These investments will signal to investors that Canada is serious about leading during the clean growth century. We are already home to thousands of companies providing clean technology products and services. Our companies are led by innovative entrepreneurs developing technologies such as next-generation biofuels, advanced batteries for electric vehicles, lightweight materials, new technologies for the mining sector, and cleaner oil sands extraction processes, among many others. By supporting these leaders we will create jobs and increase exports of our clean technologies to the global market.

WHAT SUCCESS WILL LOOK LIKE

Janine is an entrepreneur in Dawson City, Yukon. She has developed a technology that makes buildings more energy efficient. She wins a contract from the Government of Canada to supply her climate-friendly technology in building new government buildings. This helps her expand, improve her technology and bring down her costs to compete with traditional builders. She brings her product to trade shows across North America. This helps her become a clean technology leader and build a successful business.

FORESTRY, AGRICULTURE, AND WASTE

INNOVATIVE SOLUTIONS FOR REDUCING EMISSIONS

Taking Action

The Government of Canada will work with the provinces and territories to:

- Protect and enhance forests, wetlands and agricultural lands, which act as carbon sinks.
- Encourage greater use of wood products in construction.
- Identify opportunities to produce renewable fuels and bioproducts.
- Advance forestry and agricultural management practices that help reduce emissions.

Canada's rich soils and expansive forests have provided the nourishment and materials to help our communities thrive for generations. It is essential that we maintain these resources, and use them sustainably.

In addition, our communities and cities produce a lot of waste, and we must also manage this waste in a sustainable manner.

Greenhouse gas emissions from the forestry and agriculture industries and from municipal waste together account for about 13% of Canada's total.

Our country must continue to improve how it manages waste. Landfills produce methane which can be captured and used as fuel. Some agricultural waste can also be repurposed as fuel. These and other measures present an opportunity to create new jobs and reduce emissions.

Agricultural soils and forests absorb and store carbon. These "carbon sinks" actually remove carbon from the atmosphere. Enhancing carbon sinks is essential to help reach our climate goals, in particular over the longer term.

The Pan-Canadian Framework will drive emissions reductions in these sectors and enhance carbon storage in several ways.

Working with provinces and territories and landowners, the Government of Canada will support efforts to enhance carbon stored in our forests, wetlands, and agricultural soils. One way is to restore forests that have been affected by natural disturbances, like insect infestations or forest fires.



The Government of Canada will support the increased use of wood in the construction of our buildings. Wood construction provides long-term carbon storage while also creating modern, beautiful, and sustainable buildings. This will support Canada's vibrant forest industry, which over time has not only developed more efficient and sustainable forest practices, but has created new and innovative products.

We will also work with provinces and territories to enhance carbon storage in agricultural lands and reduce emissions from this sector. To accomplish this, we will encourage sustainable land management practices like "zero till" farming.

The Government of Canada will also promote the use of forestry, agricultural, and landfill biomass to create sustainable energy sources, such as renewable natural gas or advanced biofuels, or to create other bioproducts (such as bioplastics and biocomposites) that can also generate new economic opportunities for Canadians. Biofuels already help power vehicles on our roads today.

It is this type of innovation – reusing products and creating previously unimagined industries – that will help Canada thrive during the clean growth century.

Finally, governments will work together to support innovation in forestry and agriculture. Forests and agricultural lands can be managed in ways that help reduce emissions and enhance the potential to store carbon. Developing and adopting promising new clean technologies can similarly help cut emissions in these sectors.

WHAT SUCCESS WILL LOOK LIKE

Édouard and Lorraine and their two children live in Nova Scotia. By embracing new waste prevention, recycling, and composting programs in their community, they will send less waste to their local landfill. When they do send waste to the landfill, the gases will be captured and re-used to generate energy for local homes, businesses and vehicles.

ADAPTATION AND CLIMATE RESILIENCE

STRENGTHENING OUR COMMUNITIES TO THRIVE IN A CHANGING CLIMATE

Taking Action

The Government of Canada will work with the provinces and territories to:

- Help translate scientific information and Traditional Knowledge into action by establishing a Canadian centre for climate services and by building regional capacity and adaptation expertise.
- Invest in climate-resilient infrastructure and integrate climate resilience into building codes and standards.
- Invest in protecting health and well-being, including supporting healthy Indigenous communities.
- Support vulnerable regions by investing in infrastructure, strengthening capacity in the North, supporting community-based monitoring, and advancing research, monitoring, and information for coastal regions.
- Work to mitigate hazards and disasters by investing in infrastructure and advancing efforts to protect against flood damage.
- Work with Indigenous Peoples, including through community-based initiatives, to build capacity for adaptation action and address the specific risks they face due to a changing climate.

The impacts of climate change can already be felt in Canada. From rising temperatures to eroding coastlines to severe droughts, floods and wildfires, climate change poses significant risks to our health and well-being, our economy and communities and to our natural environment.

That is why we are taking action to adapt and strengthen our communities. To maintain our health and wellbeing – and the prosperity of future generations – we must prepare for the effects of climate change. The Government of Canada is working with provinces and territories through the Pan-Canadian Framework to ensure we are successful. We will also move forward with robust, meaningful engagement with Indigenous Peoples. We will take into account the unique circumstances and opportunities of Indigenous Peoples, and northern, remote, and vulnerable communities.

Science, information and collaboration will be critical to our adaptation plans. The Government of Canada will work with provinces and territories to establish a Canadian centre for climate services to make information about the impacts of climate change more widely available to Canadians, so that informed strategies can be developed.



We must also strengthen our infrastructure. With the provinces and territories, we will develop building codes to increase the resilience of our buildings and invest in infrastructure that protects Canadians from climate-related disasters. In addition, natural infrastructure can help reduce the impacts of climate change. For example, wetlands can buffer communities from flooding, trees can cool cities during heat-waves and natural shorelines can protect against sea-level rise.

The Government has committed to investing \$21.9 billion in green infrastructure over 11 years including support for climate change adaptation and building resilient communities, as well as to reduce emissions. .

The World Health Organization has also identified climate change as the greatest threat to global health in the 21st century. Our government will take action to address negative effects on the health of Canadians, including heat-related illness and infectious diseases, such as Lyme disease. The Government of Canada will also provide support for Indigenous communities to protect their public health from climate change impacts.

Some regions in Canada are especially vulnerable to the impacts of climate change. This includes the North and the country's coasts. We will work with Indigenous Peoples and territorial governments to build resilience in the North, in part through developing a northern adaptation strategy. We will work with provinces and territories to identify coastal and marine vulnerabilities, and improve ocean forecasting to make better decisions about our fisheries, oceans, and coastal infrastructure in the face of climate change.

Indigenous Peoples can be disproportionately affected by natural disasters. Therefore, the federal government, in partnership with provinces and territories, will work with Indigenous communities to address climate impacts, including the repeated and severe impacts of flooding, forest fires, and winter road failures.

We know our world is warming and we know the impacts are real. Canada will take action now to strengthen our response to these impacts and to protect our communities.

WHAT SUCCESS WILL LOOK LIKE

Don runs a construction company in the Northwest Territories. He has access to relevant information about the impacts of climate change and considers it in all stages of his work: from design to budgeting to construction and ongoing maintenance. His work will help prepare his community for future changes in the climate.

PARKS AND PROTECTED AREAS

PROTECTING OUR NATIONAL HERITAGE OF FORESTS, RIVERS, LAKES AND MOUNTAINS

Taking Action

The Government of Canada will work with the provinces and territories to:

- Protect 17 percent of its terrestrial areas, and ten percent of its marine areas by 2020.

Canadians have been inspired for generations by the wonder and mystery of their natural environment.

From the jagged peaks of the Rocky Mountains, to the stillness of Ontario's lake country, to the blue oceans that surround our coasts, our landscape tells a story through time and across geography.

As development put pressure on our natural spaces over time, protecting them became imperative. Today, we have 46 National Parks and Park Reserves, 4 National Marine Conservation Areas, and 146 National Wildlife Areas and Migratory Bird Sanctuaries that span diverse ecosystems across the country. Canadians can survey the wide, yellow vistas of Grasslands National Park in Saskatchewan, the deep fjords of Torngat Mountains National Park in Labrador or the thousands of migratory birds in Cap Tourmente National Wildlife Area.

Environment and Climate Change Canada and Parks Canada work throughout the country to protect and present special places where Canadians and people from around the world can connect and enjoy.

By protecting our lands and oceans we help fight and mitigate the effects of climate change. Lands and oceans act as massive carbon sinks, absorbing emissions that would otherwise heat our planet. They provide refuge and migration routes for native animal species. Protected areas tend to be more resilient to climate change. The total area Canada has protected in the last 20 years has increased by 70 percent. As of 2015, 10.6 percent of our terrestrial areas were protected, as well as about one percent of our vast marine areas.

Climate change is already eroding our coasts and shrinking glaciers. Climate change is also affecting biodiversity. The rapid pace of climate change will increasingly impair the ability of ecosystems and species to adapt. Scientists predict this will result in species losses. These impacts have only increased the importance of protecting our land. That is why Canada is taking measures to strengthen both our marine and terrestrial areas, and the biodiversity within them. Healthy, biologically diverse ecosystems are more resilient to change and can also help protect against climate change impacts, such as flooding and drought.

By 2020, Canada aims to protect at least 17 percent of its terrestrial areas, and 10 percent of its marine areas through networks of protected areas and other effective area-based conservation measures. By preserving these spaces we will protect more of our forests, oceans, wetlands, prairies and tundra — that, together, provide important ecological services such as flood control, clean water, carbon storage, and drought mitigation, and are a key element in the larger strategy to mitigate and adapt to climate change.

Marine Protected Areas, parks, and wilderness preserves, act as important carbon sinks. By preserving swaths of land we prevent deforestation and maintain those carbon sinks. The same goes for marine reserves. Overall, our oceans are the world's largest carbon sink, and they store more than a quarter of the carbon

dioxide humans emit. For example, healthy coastal habitats, such as salt marshes and seagrass meadows, sequester carbon at a rate two to four times greater than mature tropical forest and store three to five times more carbon per equivalent area than tropical forests. By protecting the ocean and coastal habitats, we keep that carbon from entering the atmosphere.

The Arctic is another important carbon sink. But it is at risk. Permafrost is thawing at unprecedented rates and releasing large amounts of carbon. Some experts think the Arctic could shift from a carbon sink to a net

carbon source. Protecting the oceans and lands of the Arctic has never been more important.

Canada's flora and fauna – like our oceans, rivers, forests and mountains – all form an iconic natural environment that is known and cherished around the world. We must continue to preserve and protect our parks and protected areas so that future generations of Canadians will continue to discover and be inspired by Canada's stunning beauty.

WHAT SUCCESS WILL LOOK LIKE

José and Alejandro are planning a well-deserved vacation. At first, they were planning to fly to Europe. But then they heard that Canada is Lonely Planet's top travel destination for 2017. They're also impressed by the photos they've seen of Canada's national parks, and by Canada's work to protect the environment. They decide to vacation in Canada. Tourism strengthens Canada's economy and means more jobs for the middle class and those working hard to join it.

INTERNATIONAL

Taking Action

The Government of Canada will work with the provinces and territories to:

- Deliver on Canada’s international climate-finance commitment of \$2.65 billion by 2020 to help the poorest and most vulnerable countries mitigate and adapt to climate change.
- Explore tools related to acquiring internationally transferred mitigation outcomes under the Paris Agreement.
- Engage international partners to ensure that trade rules support climate policy.

Through the Pan-Canadian Framework, Canada is taking action on climate change to reduce greenhouse gas emissions and drive clean growth. But climate change is a global phenomenon; it cannot be solved without international collaboration.

In Paris last year, we were one of 195 countries who joined together in a historic agreement to limit global average temperature increases to two degrees Celsius.

Since then, we joined Mission Innovation and committed to double clean energy research and development investment. Partnering with 22 countries and the European Union, and collaborating with businesses and investors, Mission Innovation will help accelerate the adoption of clean technologies, enhance global energy security, and drive economic growth.

In 2016, Canada helped to reach an international agreement to phase down the use of hydrofluorocarbons (HFCs), which are gases used in air conditioners and refrigerators, through the Montreal Protocol. These gases are

hundreds to thousands of times more potent drivers of climate change than carbon dioxide, and scientists believe that by dramatically reducing them, we could avoid 0.5 degrees Celsius of warming by the end of the century.

Canada also joined 66 countries to cap emissions from aviation, helping to reduce pollution and drive innovation in that sector. And along with the U.S. and Mexico, we committed to reducing methane emissions from the oil and gas sector by 40 to 45 percent by 2025.

While Canada is committed to reducing carbon pollution at home, we are also committed to working with developing countries on their climate change goals. That is why the federal government is investing \$2.65 billion in climate finance to help developing countries reduce emissions and transition to low-carbon economies and build climate resilience through adaptation.

The Pan-Canadian Framework’s first priority is to focus on reducing emissions within Canada. But part of our approach to climate change could also involve supporting projects that reduce emissions in other parts of the world to count toward Canada’s target. These projects can have lower costs and contribute to sustainable development abroad. Under the Paris Agreement, countries can acquire “internationally transferred mitigation outcomes” to meet their targets. We will develop a robust approach, informed by experts, to make sure any investments result in real emission reductions.

Canada trades many products and services with countries around the world. Together with provinces and territories, we will work with our international partners to make sure that trade rules support climate policy.

By working together with partners around the world and demonstrating climate leadership, Canada can play a key role in the global effort to address climate change.

WHAT SUCCESS WILL LOOK LIKE

Eriel and Ovide are grade 12 students in Iqaluit. They are interested in clean energy, and even got summer jobs working on a renewable energy project in an off-grid community. When they graduate, they want to travel – and also use their construction and engineering skills. They find an exciting project to help install Canadian-made clean energy technologies in Africa. It's run by a Canadian organization and funded by the Government of Canada as part of its support to help developing countries transition to low carbon economies. Eriel and Ovide get to explore the world and help communities in other countries reduce emissions and improve access to clean energy.



THE ROAD AHEAD

The Pan-Canadian Framework on Clean Growth and Climate Change is Canada's plan to reduce emissions and grow our economy. For our plan to succeed, it will require coordinated action across all regions and sectors of the economy. Together our federal, provincial and territorial governments will work to support and monitor the implementation of the Framework. This will include a wide range of ministers, from the environment to energy and mines, to finance and innovation and economic development.

The Canadian Council of Ministers of the Environment will play a significant role. This group will work together on a pan-Canadian approach to carbon offsets and credits. They will also work to ensure consistency across provinces and territories on emissions inventories and reporting. Governments will also work together to establish a process to review pricing carbon pollution, and this process will include expert assessment of stringency, effectiveness, and potential competitiveness considerations.

As we implement this plan and track progress, we will continue to engage and partner with Indigenous Peoples. We will develop a structured, collaborative approach for meaningful engagement between the Government of Canada and the representatives of Indigenous Peoples and governments. This will ensure that Indigenous Peoples are full and effective partners in advancing clean growth and addressing climate change. We will establish three distinct and separate senior-level tables with First Nations, Inuit, and the Métis Nation.

For Canada to become a leader during the clean growth century, we need to ensure that we follow through with our commitments. We need to hold ourselves to account – making sure that programs and policies we promise actually get put in place. With provinces and territories, we need to report publicly on our performance. Canadians expect to see results. Expert analysis, science, and evidence will inform report to First Ministers and Canadians. The Pan-Canadian Framework sets our goals in motion, and now the country must come together to reach them.

WHAT SUCCESS WILL LOOK LIKE

With regular and transparent progress updates on the Pan-Canadian Framework, federal, provincial and territorial governments across Canada will communicate to Canadians and the world what actions are being taken – and the progress that is being achieved – towards meeting our clean growth and climate change goals. This will provide greater certainty for people and businesses in Canada to help better plan for the future and identify opportunities for clean growth in the transition to a low-carbon future.