

Natural Resources Canada

2020–21

Departmental Plan

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

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2020-2021

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Table of contents

From the Minister	1
Plans at a glance	3
Natural Resource Science and Risk Mitigation	13
Innovative and Sustainable Natural Resources Development.....	25
Globally Competitive Natural Resource Sectors	43
Internal Services: planned results	57
Spending and human resources.....	62
Planned spending	62
Planned human resources.....	66
Estimates by vote.....	67
Consolidated future-oriented condensed statement of operations ...	67
Corporate information	70
Organizational profile.....	70
Raison d'être, mandate and role: who we are and what we do	70
Operating context	72
Reporting framework	74
Supporting information on the program inventory	75
Supplementary information tables	75
Federal tax expenditures	75
Organizational contact information	75
Appendix: definitions	77
Endnotes	81

From the Minister

Canada's vast natural resources have helped to define us as a nation and shape us as a people. We are seen as a dynamic and innovative leader - and a global supplier of choice. Today, as the urgency for climate action becomes the challenge of our times, it's clear the generational transformation underway in Canada's resource sectors will be critical to our success in this century of clean growth. This is our chance to lead, to create good, sustainable jobs, and deliver climate action that Canadians can afford.



At the dawn of this new decade, international markets are increasingly demanding that raw materials and finished goods are not just competitively priced. They must also be sustainably and inclusively produced. Climate action is central to this, but so are Indigenous rights, concerns about affordability, and the need to grow Canada's middle class. All linked together by the global nature of supply chains. That is why the Government of Canada will continue to invest in – and significantly accelerate – the transformation of our natural resources sectors. Doing so will ensure Canada remains a global leader and reaches its goal of net-zero emissions by 2050.

We are well-positioned to succeed in large part because of our “natural advantage.” It is not just that we have an abundance of the key resources used in everything from tall wood buildings and smartphones to solar panels and batteries for electric vehicles. It is about *how* we develop our resources. It is our experience and our expertise; our ingenuity and innovation. Our mining industry is a global leader in environmental practices and corporate social responsibility. Our forests, which account for nine percent of the world's trees, are the most sustainably managed, and offer a natural solution to climate change. Our electricity mix is among the cleanest. And our world-class nuclear regulator has allowed nuclear power to safely move whole parts of the country away from coal.

All of this has been happening as our resource sectors have been re-imagining their business practices with Indigenous peoples. This coincides with the Department's unprecedented pledge to advance Indigenous relationships, partnerships and reconciliation. We will continue to strengthen these relationships as TMX and other projects move forward. The Government of Canada recognizes it is critical to collaborate with both industry and Indigenous communities as we co-develop Canada's natural resources.

Our Departmental Plan reflects these priorities. In particular, it outlines our commitment to increasing opportunities for Indigenous peoples through meaningful partnerships. It demonstrates how we will accelerate the adoption of clean technologies, improve access to global markets, support workers and communities, and protect Canadians from hazards - including those arising from climate change.

We can do this. Canadians have a history of uniting to meet the important challenges of our time. We saw that spirit in a railway that spanned a continent. A broadcasting system that connected a country. And an arm that reached into space.

Today, we have a new opportunity. By building on our strength as a resource-rich country. By driving change and innovation so that we produce the world's cleanest energy. By demonstrating our track record of good corporate governance so that investors want to do business in Canada. And by ensuring all Canadians reap the benefits of the new resource economy – not just for today, but for generations to come.



Plans at a glance

Canada's resource industries are at a pivotal moment. They account for approximately 17% of our gross domestic product, contribute to close to half of our total merchandise exports (\$264 billion in 2018) and support over 1.7 million direct and indirect jobs. Yet they face three challenges. How best to remain competitive? How to build and retain market access? And most important – how to respond to the climate crisis, this century's most significant challenge? Leaders in our natural resource sectors know what is needed, and they are investing and innovating to make Canada a global leader in the transition to a cleaner, more inclusive and digitally-driven economy.

Canada is well positioned to succeed in large part because of its natural advantage, but it is not just that we have an abundance of the key resources used in everything from tall wood buildings and smartphones to solar panels and batteries for electric vehicles. It is about *how* we develop our resources. It is our experience, and our expertise, our ingenuity and innovation. Canada has a long and proud history of transforming its natural resource sectors to deal with the pace of global change. And our resource sectors will continue to diligently revolutionize. This ongoing transformation will be key to exceeding our current climate commitments to 2030 and achieving net-zero emissions by 2050. The Government of Canada is committed to doing its part to help the country's resource industries deliver, and [Natural Resources Canada \(NRCan\)](#)ⁱ is leading the way.

NRCan is a science-based department that advances the global prosperity of Canada's natural resource sectors. The Department supports the sustainable and inclusive development of Canada's natural resources through evidence-based policy and world-class research. NRCan also collaborates with Indigenous peoples and works closely with both domestic and international partners.

The Department is focused on implementing the commitments articulated in the Prime Minister’s [Mandate Letter to the Minister of Natural Resources](#),ⁱⁱ and is delivering results for Canadians across three core areas of responsibilities mandated to the Department:

- [Natural Resource Science and Risk Mitigation](#);
- [Innovative and Sustainable Natural Resources Development](#); and,
- [Globally Competitive Natural Resource Sectors](#).

Our focus for 2020-21

In 2020-21, the Department will advance five strategic priorities: accelerating the adoption of clean technology and supporting the transition to a low-carbon future; improving market access and competitiveness in Canada’s resource sectors; supporting resource communities and workers in the transition to a low-carbon economy; advancing reconciliation, building relationships, and sharing economic benefits with Indigenous peoples; and, protecting Canadians from the impacts of natural and human-induced hazards.

Accelerating the adoption of clean technology and supporting the transition to a low-carbon future

With climate change being the challenge of our time, generational transformation across *all* of Canada’s resource sectors is critical to our success in this century of clean growth. Canada’s transition to a low-carbon future is part of a global trend driven by the need to address the impacts of this changing climate and the rise of the digital economy. Moving toward a low-carbon future, meeting the Government’s current climate commitments, and achieving net-zero emissions by 2050, all require policies that enable clean growth. These policies are supported by science, research and regulations, as well as significant investments in clean technology.

NRCan will continue to implement and support programs included in the [Pan-Canadian Framework on Clean Growth and Climate Change \(PCF\)](#),ⁱⁱⁱ which are designed to fight climate change, build resilience and drive clean economic growth. These include investments in clean energy and energy efficiency through the [Green Infrastructure Programs](#),^{iv} which support research, development, demonstration and deployment projects in areas such as [Smart Grid](#),^v [Energy Efficient Buildings](#),^{vi}



Solar panels in Banff National Park

Emerging Renewable Power, Clean Energy for Rural and Remote Communities (CERRC),^{vii} **Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative**,^{viii} and **Electric Vehicle Infrastructure Demonstrations (EVID)**.^{ix} Such efforts will be central to advancing our energy transformation and ensuring our success under **PCF**.^x

NRCan will drive innovation through its **Energy Innovation Program**,^{xi} the **Program of Energy Research and Development**^{xii} and the **Clean Growth Program**.^{xiii} For this, NRCan will undertake and fund world-class research, development and demonstrations in clean technologies, and in reducing environmental impacts. Clean technology producers and adopters will continue to have a single, simple point of contact with government programs and services through the **Clean Growth Hub**,^{xiv} led jointly with **Innovation, Science and Economic Development Canada (ISED)**.^{xv} By fostering continued research and innovation in the clean technology sector, the government will support industry as it transforms itself for this century of clean growth.

In 2020-21, NRCan will support breakthrough solutions to complex problems in awarding four grand prizes for **Clean Technology Challenges**^{xvi} as part of the **Impact Canada Initiative**. NRCan will also maintain its leading role in the **Mining Value from Waste Program**,^{xvii} a pan-Canadian initiative under **Green Mining Innovation**,^{xviii} aiming to continue to reduce the environmental, social and economic footprints of mine wastes.

NRCan will build on the recommendations of the **Generation Energy Council Report**,^{xix} which proposed pathways to the Government of Canada on how to build Canada's energy future. NRCan will continue to work with partners to make smarter use of energy, switch to clean power, use more renewable fuels and produce cleaner petroleum, including in the offshore industry.

NRCan will promote home energy audits to help homeowners understand how their residence uses energy and how upgrades and retrofits could save them energy and money. NRCan will also help ensure that Canadians have access to the products and equipment that deliver energy savings, so as to encourage smarter energy use and reduce Canada's emissions. NRCan will work closely with the Federation of Canadian Municipalities to roll out **Green Municipal Fund programs**^{xx} that aim to drive retrofits in social housing and reduce emissions from large municipal buildings.

NRCan will also help Canadians and businesses switch to clean power, with a view to begin a widespread transformation of the electricity sector. This help will entail collaborating with the provinces and territories and with Indigenous peoples to implement the **Clean Power Road Map for Atlantic Canada**,^{xxi} pursue work with British Columbia under the **Memorandum of Understanding on the Electrification of the Natural Gas Sector**,^{xxii} and continue to support off-diesel projects across the country. NRCan, with **Infrastructure Canada (INFC)**,^{xxiii} will

also further advance electrification, zero-carbon electricity generation, transmission systems and grid modernization.

To diversify access to clean electric power and reduce greenhouse gas (GHG) emissions, the Department will work with provinces and stakeholders to implement recommendations from the **Canadian Small Modular Reactor (SMR) Roadmap**.^{xxiv} This effort includes working with Indigenous and other partners on regulatory frameworks.

NRCan will work in collaboration with the energy industry to help fulfill the goal of transforming Canadian oil and gas into the cleanest global petroleum sector. This will involve engaging and collaborating with key industry players and innovation leaders to focus on strategies that minimize energy consumption and GHG emissions related to petroleum development, while remaining competitive. Central to this goal is building on the relationships that NRCan has already established with industry and provincial partners in supporting research development and deployment (RD&D) towards achieving GHG, and economic, social and governance targets.

The forestry sector is vital to a cleaner future. That is why the Department will collaborate with provincial and territorial partners to deliver on the **Forest Bioeconomy Framework**^{xxv} by advancing its implementation through initiatives such as the **Indigenous Forestry Initiative (IFI)**.^{xxvi} Through the framework, Canadian wood and forest fibre residues would be transformed into high-value bio-products, chemicals and fuels in a sustainable manner.

NRCan, in cooperation with **Environment and Climate Change Canada (ECCC)**,^{xxvii} will operationalize a plan to plant two billion trees over the next 10 years and will monitor their growth as part of a broader commitment to supporting natural climate solutions and reduced GHG emissions. This includes working with ECCC and urban forest stakeholders to help cities expand and diversify their urban forests, as well as investing to protect trees from infestations and, when ecologically appropriate, to help rebuild our forests after a wildfire or a pest infestation.

Improving market access and competitiveness in Canada's resource sectors

Nowhere is our natural advantage in the resource sector more evident than in the export sector. As a supplier of raw materials, the success of our resource industries depends on our ability to build and retain new markets. NRCan will support Canada's competitiveness in the natural resource sectors by supporting natural resource companies to increase the return on their products and services. This will be achieved by applying innovative tools and technologies, exploring new science and growth opportunities, such as those offered by critical minerals, digitization and artificial intelligence, and accessing new markets.

Canada will collaborate with the U.S. through a **Joint Action Plan on Critical Minerals**^{xxviii} with the objective of attracting investment in Canadian exploration and mining projects, as well as spurring job creation and economic growth in various downstream industries. Leveraging our critical mineral wealth builds competitive supply chains for important manufacturing sectors, including communications technology, aerospace and defence, and clean technology. It thereby delivers on a key commitment made by the Government of Canada. For example, to build the critical mineral value chains required for a made in Canada battery industry, NRCan will collaborate with ISED, industry stakeholders and other government departments to develop a Canadian battery strategy. This development will support attracting investments and growing Canada's domestic industry.

NRCan will build on our position as a leading mining nation, with a strong reputation for ethical governance, innovation and sustainability. We will continue to advance the **Canadian Minerals and Metals Plan (CMMP)**.^{xxix} The plan will boost Canadian competitiveness as a low-carbon, digitized economy. To do this, NRCan will collaborate with the provinces, territories, Indigenous peoples, industry and other stakeholders, building on geoscience generated by the **Targeted Geoscience Initiative (TGI)**^{xxx} and **Geo-Mapping for Energy and Minerals (GEM)**^{xxxi} program to explore Northern Canada. NRCan will also remain an active participant in the development of the next phase of the **Arctic and Northern Policy Framework**,^{xxxii} which is led by **Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)**.^{xxxiii} The aim of the framework is to enable a vibrant, prosperous and sustainable northern region. NRCan will also monitor requirements for the **Polar Continental Shelf Program**^{xxxiv} with regard to providing logistical support to enable science activities in the Arctic and the programs' ability to respond to growing demand.

NRCan will also work with partners in industry, academia and other levels of government to enhance its ability to support the digital innovation that natural resource sectors need to be a sustainable and low-carbon contributor to Canada's competitive economy. This includes the NRCan Digital Accelerator Initiative established in 2019 to support the use of advanced artificial intelligence and machine learning techniques by NRCan scientists.

NRCan will continue to advance the development of major infrastructure projects, and strategic resource projects that are important to the competitiveness of Canada's natural resource sectors. The Department will work with **Finance Canada (FIN)**^{xxxv} to complete the twinning of the Trans Mountain Pipeline, as well as to ensure that revenues from the **Trans Mountain Expansion (TMX) Project**,^{xxxvi} including profits from its eventual sale, will help fund Canada's transition to a cleaner economy.

In keeping with the government's commitment to reconciliation with Indigenous peoples, NRCan will coordinate the implementation of the Government of Canada's eight accommodation measures and its responses to the **Canada Energy Regulator's (CER)**^{xxxvii} 16

recommendations for the TMX project. This implementation will be done in collaboration with **Fisheries and Oceans Canada (DFO)**,^{xxxviii} the **Canadian Coast Guard (CCG)**,^{xxxix} **Transport Canada (TC)**^{xl} and ECCC. These initiatives will address concerns raised regarding the potential impacts of the **TMX Project**^{xli} as well as concerns about the cumulative effects brought on in conjunction with other projects and processes in the region. The Department will move forward to support the efficient and effective implementation of the *Canadian Energy Regulator Act*^{xlii} and the *Impact Assessment Act*.^{xliii} This support will help Canada provide regulatory stability for investors, while recognizing the connection between the economy and the environment, and the rights of Indigenous peoples.

Specifically, NRCan will work with the **Impact Assessment Agency of Canada (IAAC)**,^{xliv} the governments of Newfoundland and Labrador and of Nova Scotia, and the Offshore Petroleum Boards to implement the *Impact Assessment Act*^{xlv} in the Atlantic offshore region. This work will include upholding commitments to complete regional assessments and regulations required to exempt lower-impact activities, such as exploratory drilling, from undergoing a project-specific impact assessment. The regulatory regime will continue to maintain the strongest environmental protections.

As the world's energy mix transitions to lower carbon forms of energy, NRCan will support the petroleum sector's transformation to become the cleanest global petroleum sector, and will work with its provincial and territorial counterparts, Indigenous peoples, industry and stakeholders to advance these efforts with a focus on innovation, electrification, product diversification, and project development and investment.

To support the expansion of the forest sector, Canada is working with international partners to develop standards, policies, and regulations in relation to the bioeconomy. NRCan is also engaging with countries such as Finland, Sweden, Norway and Germany to advance bioeconomy opportunities through science and knowledge exchange, technology development, business-to-business relationships and sustainable forest management.

NRCan will target new and priority markets for Canada's natural resource sectors to support businesses that want to export their goods, services and technologies to global markets. The Department will support enhancing market integration, competitiveness and free trade in natural resources by leveraging trade agreements such as the **Canada-US-Mexico Agreement (CUSMA)**,^{xlvi} the **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**^{xlvii} and the **Canada-EU Comprehensive Economic and Trade Agreement**.^{xlviii}

In 2020-21, NRCan will continue to advance its bilateral and multilateral engagements with international institutions and organizations. We will engage through multilateral fora, such as the **G7**,^{xlix} **G20**,^l **International Energy Agency**,^{li} **International Energy Forum**,^{lii} and the **International Renewable Energy Agency**.^{liii} This effort will build on the momentum created in

recent years, namely through Canada’s **2018 G7 presidency**^{liv} and Canada’s role as host of the **2019 Clean Energy Ministerial and Mission Innovation Ministerial meetings (CEM10/ MI-4)**.^{lv}

NRCan will also work with Indigenous peoples and stakeholders across the country to implement recommendations from the **Resources of the Future**^{lvi} and the **Clean Technology Economic Strategy Tables**.^{lvii} These have identified opportunities to improve competitiveness and unlock future growth in natural resource sectors. The opportunities include building on the work of the **Joint Industry-Government Working Group** on a Future Vision for Canada’s Upstream Oil and Gas sector and the **Atlantic Offshore Competitiveness Roundtable**,^{lviii} which examined concerns regarding the competitiveness of the petroleum industry.

Supporting resource communities and workers in the transition to a low carbon economy

The transition to a low carbon economy will change the nature of work in many resource sectors. The Department will work with **Employment and Social Development Canada (ESDC)**^{lix} and other federal partners to advance legislation to support the future and livelihood of workers, their communities and Indigenous peoples in the transition to a low-carbon global economy.

The Department will defend Canadians, communities, workers and industry from unfair trade disputes. Informed by the recommendations from the **Task Force on Just Transition for Canadian Coal Power Workers and Communities**,^{lx} NRCan will continue to contribute to the Government of Canada’s efforts to support workers and communities through the low-carbon energy transition. NRCan will look at ways to foster future skills, create inclusive cultures, and promote new partnerships and governance models throughout natural resource sectors.

NRCan will continue to deliver the **Science and Technology Internship Program**,^{lxi} as part of Canada’s **Youth Employment and Skills Strategy**.^{lxii} This program supports work experience opportunities for youth in science, technology, engineering and math (STEM) fields in the natural resource sectors. These internships contribute to the development and promotion of our national scientific and technological capacity, and ensure that Canada has the skilled labour force required to maintain competitive natural resource sectors.

Advancing reconciliation, building relationships, and sharing economic benefits with Indigenous peoples

The relationship between Canada and Indigenous peoples is vitally important, not just to our shared socio-economic interests, but to our respective identities as Nations. The Government of Canada is committed to strengthening its relationship with Indigenous peoples based on the recognition of rights, respect, cooperation, and partnership.

Many Indigenous peoples rely on natural resource sectors to bring prosperity to their communities and are a driving force for economic development opportunities in those sectors. NRCan is committed to building long-term, mutually-beneficial relationships and partnerships with Indigenous peoples and supports the sharing of Indigenous knowledge.

In continuing to advance reconciliation, including economic reconciliation, NRCan will ensure there are increased opportunities for Indigenous peoples to participate and share in the prosperity of the development of Canada's natural resources. NRCan will braid and weave Indigenous knowledge with western science so as to strengthen our knowledge base.

In 2020-21, the Department will work with **CIRNAC**^{lxiii} and FIN to develop a new national benefits-sharing framework for major resource projects located on Indigenous territory. The Department will also support Indigenous-led economic development in Canada's forest sector through the **Indigenous Forestry Initiative (IFI)**,^{lxiv} which is part of the **Forest Bioeconomy Framework**.^{lxv} The **IFI**^{lxvi} supports business development and capacity-building activities that increase Indigenous participation in forest-based opportunities, careers and governance.

The government is also committed to maintaining and strengthening relationships with Indigenous communities in the post-decision period of the TMX Project. Phase IV Engagement will continue to build on the two-way, meaningful dialogue established during consultations to help communities navigate initiatives and accommodations related to the project. NRCan will continue to coordinate federal whole-of-government implementation of accommodations and complementary measures related to the project's approval, so as to address potential impacts on Indigenous communities. Additionally, the **Indigenous Advisory and Monitoring Committees**^{lxvii} will continue to provide monitoring and oversight of the TMX and Line 3 pipelines.

NRCan will help enable Northern and Indigenous communities to contribute to a low-carbon future. The Department will work with INFC and **Indigenous Services Canada (ISC)**^{lxviii} to support the communities in their transition from diesel to clean, renewable and reliable energy by 2030.

The benefits of these advancements will herald positive results for all Canadians. In particular, they will help transition Indigenous and other Northern communities away from diesel fuel dependence, in favour of greener alternatives.

Protecting Canadians from the impacts of natural and human-induced hazards

Serious natural and human-induced hazards can have dramatic impacts on the lives of Canadians, the security of Canada’s critical infrastructure, and the overall economy. NRCan works with its partners to safeguard Canadians from the effects of these hazards by conducting scientific research and developing programming that helps anticipate and model hazards.

To protect Canadians from the effects of natural hazards, the Department will provide federal scientific and geospatial coordination with provinces, territories, academic institutions and the private sector. This coordination will enhance pan-Canadian efforts in flood mapping and flood risk management. These activities will support the **Government of Canada’s Emergency Management Strategy**^{lxi} and overall federal efforts for enhanced emergency management capabilities.

NRCan will also provide federal science leadership for the collaborative implementation of the **Canadian Wildland Fire Strategy**,^{lxx} enabling research related to national wildfire risk assessment and analysis to provide information that is grounded in science, which makes strengthened decision-making possible.

In 2020-21, NRCan will maintain its scientific leadership in supporting the protection of Canada’s forests from pests, including fighting the spread of the **spruce budworm**,^{lxxi} the **emerald ash borer**,^{lxxii} the **mountain pine beetle**^{lxxiii} and other invasive species of concern in rural and urban forests.

Recognizing that large earthquakes are a significant threat to Canadians and the Canadian economy, the Department will update the seismic hazard models for the **National Building Code**^{lxxiv} and to provide authoritative alerting for earthquake in Canada. In addition, in 2020-21, NRCan will begin developing a national early warning system for earthquakes. This system will give the public and infrastructure operators valuable seconds warning before the strong shaking from large earthquakes.

As Canada’s regulator for explosives, NRCan authorizes and licenses activities with explosives and oversees a compliance verification and inspection program. Through consultations and with the agreement of industry stakeholders and law enforcement partners, NRCan is taking steps to expand the current list of precursor chemicals (from 10 to 14) that are subject to regulatory amendment. This change will leverage the science and technology efforts of our partners and require sellers of the four additional chemicals be registered.

As Canada modernizes and digitizes energy systems and explores new opportunities across the value chain, there is a need to increase the safety and security of critical infrastructure given the threat of cyber crime. In 2020-21, NRCan will be working with partners to strengthen Canada’s capacity to protect critical energy infrastructure.

For more information on Natural Resources Canada’s plans, priorities and expected results, see the “Core responsibilities: planned results and resources, and key risks” section of this report.



Core responsibilities: planned results and resources, and key risks

Natural Resource Science and Risk Mitigation

Description

Lead foundational science and share expertise for managing Canada's natural resources, reducing the impacts of climate change and mitigating risks from natural disasters and explosives.

This Core Responsibility supports the advancement of the following **Strategic Priorities:**

- Protecting Canadians from the impacts of natural and human-induced hazards
- Accelerating the adoption of clean technology and supporting the transition to a low-carbon future
- Advancing reconciliation, building relationships, and sharing economic benefits with Indigenous peoples

This Core Responsibility also contributes to the achievement of the **Mandate Letter Commitments** of the Minister of Natural Resources:

- Invest in protecting trees from infestations and, when ecologically appropriate, help rebuild our forests after a wildfire;
- Support research and provide funding so that municipalities have access to domestic sources of climate-resilient and genetically diverse trees that will increase the resilience of our urban forests;
- Operationalize the plan to plant two billion incremental trees over the next 10 years as part of a broader commitment to natural climate solutions;
- Work with the provinces and territories and Indigenous peoples to complete all flood maps in Canada;
- Monitor and identify any additional assistance the Polar Continental Shelf Program may require to respond to growing demand; and,
- Work with partners to advance legislation to support the future and livelihood of workers and their communities in the transition to a low-carbon global economy.

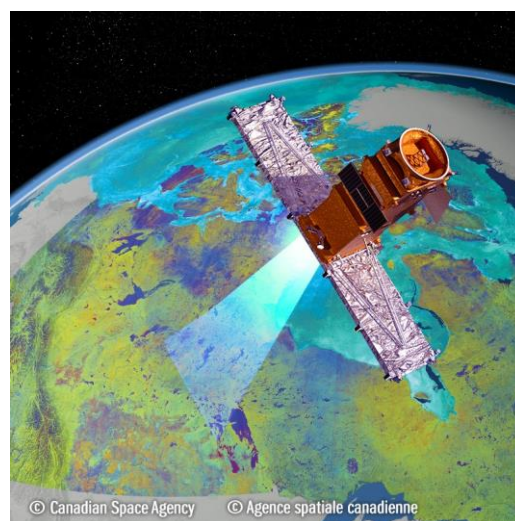
Planning highlights

NRCan is a science-based department with more than half of its total expenditures (excluding statutory expenses) devoted to science and technology activities, and approximately 49% of its employees working in related areas. The Department collaborates with other federal departments, provincial, territorial and local governments, Indigenous peoples, academic institutions and industry to conduct science and research. These activities are undertaken to reduce the impacts of climate change, mitigate risks from natural hazards, support regulatory functions, promote innovation, advance pre-commercial technology and improve the economic well-being of Canadians, as well as to provide expert advice and guidance to decision makers. In 2020-21, the Department will grow its scientific knowledge and capacity, drawing on multiple ways of learning, including contemporary and Indigenous sciences.

NRCan’s science and technologies ensure Canadians have access to cutting-edge research to inform decisions on natural resource management.

NRCan will continue to co-lead with ECCC on the delivery of an online Open Science and Data Platform (OSDP) leveraging the **Federal Geospatial Platform (FGP)**^{lxxv} to provide public access to the science and data that inform decision-making for major natural resource development projects, and to support Canada’s approach to addressing cumulative effects. This will help monitor, visualize and report on how our lands, water and infrastructures are changing.

The Department will develop and deliver core geospatial data and services, including: Emergency Geomatics Services that provide near-real time mapping information to support Canada’s response to floods and other disasters; analysis of satellite data from the recently launched **RADARSAT Constellation Mission**,^{lxxvi} and, access to the **National Air Photo Library**^{lxxvii} and earth observation data through the Department’s recently launched **Earth Observation Data Management System**.^{lxxviii}



RADARSAT Constellation Mission

NRCan will also develop tools for forest carbon analysis to produce spatially detailed estimates of carbon stock changes in both the managed and northern unmanaged forests, and to assess how forest management and use can contribute to climate change mitigation. Working with ECCC, NRCan will produce forest carbon estimates for Canada’s 2021 GHG **National Inventory Report**.^{lxxix}

Species at risk, particularly the threatened woodland caribou continue to be an important issue for natural resource sectors. NRCan is working closely with ECCC and Indigenous peoples to

gain a better understanding of the socioeconomic impacts of potential caribou protection measures and the science related to caribou habitat and populations across Canada. In 2020-21, the Department will collaborate with ECCC to evaluate the effectiveness of the existing *Species at Risk Act*^{lxxx} and assess the need to modernize the *Act* to ensure federal legislation balances ecological integrity with community resilience.

Building on funding received through the 2018 Budget to be able to provide more scientific and technical expertise, NRCan will provide science and technology expertise and advice to support impact and regional assessments. This scientific and technical expertise informs decision-making for major natural resource development projects, and supports Canada's approach to addressing cumulative effects.

Since 2008, the **Geo-Mapping for Energy and Minerals (GEM)**^{lxxxii} program has provided the exploration industry and northern communities with valuable tools to explore Northern Canada. GEM knowledge and data have informed, and will continue to inform, the decisions of Northerners, northern institutions and the resource industry to stimulate a strong northern economy through stable, long-term investments in responsible resource development.

On September 10, 2019, Canada's new **Arctic and Northern Policy Framework**^{lxxxiii} was launched by CIRNAC. This framework was co-developed with Indigenous, territorial and provincial partners, and 25 federal government departments and agencies. It is based on a long-term vision for a strong, self-reliant people and communities working together for a vibrant, prosperous and sustainable Northern region. The next phase of framework co-development will focus on implementation, investment strategies and governance. NRCan will remain an active participant in the development of the next phase of the **Arctic and Northern Policy Framework**^{lxxxiii} to ensure collaboration and impactful investments in the short and long-term in the North.

The **Polar Continental Shelf Program's**^{lxxxiv} whole-of government approach provides logistics to enable Arctic science activities that deliver on government priorities. The program will continue to monitor and identify requirements to respond to growing demand from university and government scientists and collaborate with partners, including **Polar Knowledge Canada**,^{lxxxv} CIRNAC and the **Department of National Defence (DND)**.^{lxxxvi}

NRCan will also continue to work with Indigenous partners, CIRNAC, and ISC to increase participation in the **First Nation Land Management Framework Agreement**^{lxxxvii} and facilitate the transition away from the *Indian Act*.^{lxxxviii} This will be accomplished by providing opt-in First Nations with descriptions of their lands to fall under a First Nations Land Code, and delivering a land surveying capacity development program to 24 First Nations over the next five years. The Department will continue to support the Government of Canada in providing unambiguous land descriptions and boundary certainty for Indigenous lands and new lands to their land base. This

contributes to addressing outstanding historic claims, improving community access to land and resources, increasing Indigenous land base to support socio-economic development and advancing the whole-of-government reconciliation agenda.

NRCan contributes to safeguarding Canadians from natural hazards and explosives through research and the development of tools

NRCan is recognized domestically and internationally as a key source of science-based information on natural hazards and risks. The Department continues to conduct fundamental research into the causative mechanisms of natural disasters. The Department is the authoritative source, as mandated under the *Emergency Management Act*,^{lxxxix} of scientific and technical information regarding earthquakes, tsunamis, volcanoes, landslides, space weather, geomagnetism, and nuclear and radiological incidents.

In the coming year, NRCan will contribute its expertise to quantifying where and how frequently natural hazards will occur, with an increased emphasis on elaborating the risk to Canadians, taking into account the exposure, vulnerability and resilience of regions and communities. For example, NRCan will begin implementing a national **Earthquake Early Warning System**. Upon completion, this system will provide seconds to minutes of warning of a major earthquake in high-risk areas, which might affect critical infrastructure, allowing mitigation measures to be taken.

The Department, in collaboration with provinces, territories, academic institutions and the private sector will also provide federal scientific and geospatial coordination to renew and enhance pan-Canadian efforts in the area of flood mapping and flood risk management. These activities will support the Government of Canada's **Emergency Management Strategy**^{xc} and overall federal efforts for enhanced emergency management capabilities.

Emergency Geomatics Service

In 2020-21, NRCan's Emergency Geomatics Service will integrate new RADARSAT Constellation Mission data streams into the production of near real-time flood extent and ice break-up maps. This will improve the frequency and accuracy of critical data and information required by the Government Operations Centre, DND, provincial/territorial and municipal emergency responders for decision making during disasters.



NRCan's Emergency Geomatics Service uses satellite imagery to map flooding in near-real time to support emergency response.

Similarly, NRCan provides subject matter expertise and delivers satellite-imagery derived from open water flood products and services, in near-real time for national and international emergency response in support of NRCan, other government departments and agencies, primarily Public Safety Canada (PSC), DND, and provincial emergency management agencies.

In 2020-21, the Department will continue to use science to minimize the risks to Canadians' lives and properties due to wildfires. NRCan will provide federal leadership in science for the collaborative implementation of the **Canadian Wildland Fire Strategy**,^{xci} enabling research related to national wildfire risk assessment and analysis to provide science-based information for better decision-making. This research, accessible to Canadians, will result in a national approach to fire risk assessment and analysis, which will involve federal-provincial-territorial partners, Indigenous and municipal leaders, and the private sector. In addition, NRCan will work to meet its commitments under the **Emergency Management Strategy**^{xcii} that include wildfire risk assessments and supporting the resiliency of Canadian communities.

Each year, NRCan also invests in science to help forest managers and communities understand and monitor pests, as well as develop responses to limit the damage caused by such pests in Canada. In 2020-21, NRCan will support research into an early intervention strategy to maintain **spruce budworm**^{xciii} populations below outbreak levels. The Department will conduct research to support risk assessment, surveillance, rapid response and longer-term management for the **emerald ash borer**^{xciv} and other invasive species of concern in rural and urban forests. NRCan scientists will also conduct innovative research to develop resistant and resilient trees to invasive pests.

Research conducted by NRCan will further enhance understanding of **mountain pine beetle**^{xcv} behaviour in its invaded range in Alberta's boreal forest. In 2020-21, the Department will engage with Western provinces and other departments and agencies to foster collaborative approaches to slow the eastward spread of the mountain pine beetle infestation. In conjunction with the Canadian Food Inspection Agency (CFIA) and the forest industry, the Department will provide science-based advice addressing forest pest issues in international trade. This will facilitate safe movement of commodities and safeguard forest resources.

As Canada's regulator for explosives, the Department regulates precursor chemicals that are used as "ingredients" in manufacturing homemade explosives or improvised explosive devices. NRCan ensures that manufacturers, importers, exporters, and vendors of explosives, as well as those who store explosives, comply with Canada's **Explosives Act**^{xcvi} and Regulations and that explosive precursors are kept out of the hands of criminals or terrorists. Through consultations and agreement from industry stakeholders and law enforcement partners, NRCan is taking steps to expand the current list of precursor chemicals (from 10 to 14) subject to regulatory amendment. This will leverage the science and technology efforts of our allied partners and require the sellers of the four additional chemicals to be registered.

NRCan leads activities to help ensure that communities and industry are adapting to climate change

To address the complex and cross cutting issue of climate change adaptation, NRCan will take actions in a number of areas in 2020-21. The Department will continue to lead **Canada's Climate Change Adaptation Platform**,^{xcvii} a national forum that brings together key groups to collaborate on climate change adaptation. NRCan will also lead **Canada in a Changing Climate: Advancing our Knowledge for Action**,^{xcviii} the national assessment of how and why Canada's climate is changing; the impacts of these changes on our communities, environment, and economy; and how Canadians are adapting to these impacts. Following the successful release in April 2019 of the first report in the series *Canada's Changing Climate Report*,^{xcix} the next two reports will be released by chapter, as available, starting in summer 2020. These reports - *National Issues and Regional Perspectives* - will discuss the impacts of climate change across Canada and how adaptation reduces the associated risks.

Through the **Building Regional Adaptation Capacity and Expertise (BRACE) Program**,^c NRCan will continue to support regional projects that build the skills and expertise communities, industry, and practitioners need to apply climate change considerations in their operations and practice. Investments in training and knowledge exchange activities through the BRACE program aim to increase the capacity of organizations, professionals, and communities to undertake climate change adaptation action.

More than 20 projects funded by the **Climate Change Adaptation Program** will also deliver results in 2020-21. The results of these projects, for example, will improve estimates of the costs and benefits of climate change impacts and adaptation, provide new guidance to help natural resource companies integrate adaptation to climate change into their operations, and inform actions to increase the resilience of coastal communities to sea level rise.

NRCan will also provide research and knowledge to help ensure municipalities have access to domestic sources of climate-resilient and genetically diverse trees that will increase the resilience of our urban forests. Furthermore, NRCan's **Forest Climate Change Program**^{ci} will continue to provide science-based adaptation solutions to the Canadian forestry sector and forest-based communities in the form of adaptation tools and collaborative regional integrated assessment projects.

United Nations' 2030 Agenda and Sustainable Development Goals (SDGs)

NRCan's planned activities under this Core Responsibility support Canada's efforts to address the UN 2030 Agenda and the achievement of several Sustainable Development Goals (SDG).

For example, in support of **SDG 13 - Climate Action**,^{cii} **Canada's Climate Change Adaptation Platform**^{ciii} facilitates the collaboration of Canada's experts in business, government and not-

for-profit organizations to identify opportunities, manage risks and solve problems related to climate change adaptation. In addition, the **Forest Climate Change Program**^{ci} uses science and technology to understand and mitigate the impacts climate change has on forests, while the **Wildfire Risk Management** program strengthens Canada’s resilience and adaptive capacity to dangerous, climate induced-wildfires.

NRCan’s work under the **Emergency Management Strategy** contributes to **SDG 11 – Sustainable Cities and Communities**^{cv} through ongoing research, and the implementation of tools that reduce risk and prevent harm caused by natural hazards.

Additional information about how NRCan activities support **United Nations’ 2030 Agenda** and **Sustainable Development Goals** will be reflected under the NRCAN 2020-23 Departmental Sustainable Development Strategy. Altogether, NRCan’s scientific research and the use of clean technology continue to mitigate and reduce the impacts of climate change, building a safer, more resilient Canada.

Departmental Risk

NRCan has identified a number of risks under this Core Responsibility, including the increasing impact of climate change on the natural resource sectors and on Canadian communities, as well as their abilities to adapt to it; keeping abreast of the rapid pace of science and technological innovation; and, the increasing occurrence of natural and human-induced hazards and emergencies. The Department will continue to manage these risks through the development, implementation and monitoring of various mitigation strategies, including:

- Investing in research, development, demonstration and deployment projects that advance solutions to pressing environmental challenges and the transition to a low-carbon economy;
- Supporting training and knowledge exchange activities to increase the capacity of organizations, professionals, and communities to undertake climate change adaptation action; and,
- Addressing needs of communities and critical infrastructure through pre-emptive and preventative, or responsive measures, using innovative science and technology.

Gender-Based Analysis Plus (GBA+)

Natural Resources Canada is using Gender-Based Analysis Plus (GBA+) to rigorously assess all Treasury Board Submissions, Memoranda to Cabinet and Budget proposals for potential impacts or implications on diverse populations of Canadians. This allows the Department to respond to potential barriers while facilitating more inclusive and equitable opportunities and outcomes.

For example, under the **Core Responsibility – Natural Resource Science and Risk Mitigation**, NRCan will work to achieve more inclusive outcomes through the **Enabling Arctic Science Initiative**, which has used GBA+ to identify the need to collect disaggregated data beyond just gender. This coming year, NRCan plans to address this need through modifications to service request forms and incorporate these into internal processes. Further opportunities to collect disaggregated data on gender, Indigenous status and ethnicity will also be examined as part of upcoming program evaluation.

This GBA+ analysis serves to ensure that NRCan actively promotes diversity in the department’s proposed policies, programs, initiatives and services. For further information on GBA+ at NRCan, please refer to the *GBA+ Supplementary Information Table*.

Experimentation with Scientific Publications

Increasing access to scientific publications is a key objective of Open Science. In 2020-21, the Department will be exploring opportunities to design experiments to assess the effect of investment in scientific publishing for achieving immediate open access on the impacts of scientific publications. This work could inform decisions on action plans for open access to hundreds of scientific publications per year, and explore the long-term impact of their early access to the wider community.

Planned Results for Natural Resource Science and Risk Mitigation

Departmental result	Departmental result indicator	Target	Date to achieve target	2016–17 Actual result	2017–18 Actual result	2018–19 Actual result
Canadians have access to cutting-edge research to inform decisions on the management of natural resources	Number of times scientific products related to natural resources are accessed by Canadians	At least 500,000 quarterly average	March 2021	349,171	484,904 ¹	482,745 ¹
	Percentage of environmental impact assessments demonstrating use of scientific and technical advice provided by NRCan	100%	March 2021	100%	100%	100%
	Number of times stakeholders acknowledge using NRCan's scientific and technical products in making their decisions	At least 30,250	March 2021	Not Available ²	30,250	26,142

¹ Since the 2018-19 Departmental Plan, NRCan has revised the methodology to more accurately count access to NRCan's scientific products rather than to the landing pages for these products. The 2017-18 and 2018-19 results reflect the change in methodology.

² NRCan established a new Departmental Results Framework to report its results starting in 2018-19. Several indicators were new as of April 2018 and historical information is not available for all previous years.

	Number of training and development initiatives that enable NRCan to incorporate Indigenous knowledge in conjunction with NRCan science	At least 35	March 2021	Not Available ²	Not Available ²	69
	Percentage of annual updates to make NRCan foundational geospatial data current	At least 20% average annual updates towards full refresh over 5 years	March 2021	Not Available ³	Not Available ³	Not Available ³
Communities and officials have the tools to safeguard Canadians from natural hazards and explosives	Percentage of hazardous natural events within Canada for which a notification was issued in a timely manner	At least 90% (100% by March 2023)	March 2021	Not available ⁴	70%	100%
	Percentage of emergency geomatics services provided to Canadians in a timely manner to assist during floods	At least 95%	March 2021	100%	100%	100%

³ Historical information is not available for all previous years for this indicator given that the indicator and its methodology were amended starting in 2020-21.

⁴ Due to recent enhancements of the earthquake monitoring network and change in the methodology, the results for prior years for this indicator are not comparable.

	Percentage uptime of the Canadian Wildland Fire Information System during the wildfire season	At least 97%	March 2021	Not Available ³	Not Available ³	95%
	Percentage of inspections of explosives rated safe ⁵	At least 70% (90% by March 2025)	March 2021	Not Available ⁶	Not Available ⁶	64.2%
Communities and industries are adapting to climate change	Number of times NRCan products and expertise on adaptation are accessed by Canadians	At least 35,000 quarterly average	March 2021	Not Available ²	18,602	20,272
	Percentage of Canadian communities and industries that have taken steps to adapt to climate change	At least 60% for communities At least 40% for businesses	March 2023	50% for communities 30% for businesses ⁷ (from 2012 survey)	57% for communities 32% for businesses ⁷ (from 2017 survey)	57% for communities 32% for businesses ⁷ (from 2017 survey)

⁵ A 'safe' rating indicates an inspection rated "satisfactory or better". NRCan conducts rigorous and timely follow up on any facility that does not achieve a satisfactory rating.

⁶ NRCan has revised the methodology to more accurately calculate the percentage of inspections rated safe. This has resulted in a more rigorous inspection ratings regime but means that historical data prior to 2018-19 are not directly comparable to more recent results.

⁷ This indicator tracks progress on long-term outcomes and is measured through a survey conducted every five years. The next set of results will be available in 2022. The 2018-19 results repeat data from the previous year. The trend from the 2012 to 2017 survey results indicates an increase in steps taken to adapt to climate change.

Planned budgetary financial resources for Natural Resource Science and Risk Mitigation

2020–21 budgetary spending (as indicated in Main Estimates)	2020–21 planned spending	2021–22 planned spending	2022–23 planned spending
\$214,015,248	\$ 214,015,248	\$ 211,981,702	\$178,259,983

Planned human resources for Natural Resource Science and Risk Mitigation

2020–21 planned full-time equivalents	2021–22 planned full-time equivalents	2022–23 planned full-time equivalents
1,226	1,215	1,207

Financial, human resources and performance information for the Natural Resources Canada's program inventory is available in the [GC InfoBase](#).^{cvi}



Innovative and Sustainable Natural Resources Development

Description

Lead the transformation to a low-carbon economy by improving the environmental performance of Canada's natural resource sectors through innovation and sustainable development and use.

This Core Responsibility supports the advancement of the following **Strategic Priorities**:

- Accelerating the adoption of clean technology and supporting the transition of a low-carbon future
- Improving market access and competitiveness in Canada's resource sectors
- Supporting resource communities and workers in a low carbon economy
- Advancing reconciliation, building relationships, and sharing economic benefits with Indigenous peoples

This Core Responsibility also contributes to the achievement of the **Mandate Letter Commitments** of the Minister of Natural Resources:

- Work with partners to implement, as appropriate, the recommendations of the Generation Energy Council Report, including smarter use of energy, switching to clean power, using more renewable fuels, and producing cleaner oil and gas, including in the offshore. Work with partners to implement the Canadian Minerals and Metals Plan and to develop strategies to help strengthen the competitiveness and overall health of Canada's forest sector;
- Install up to 5,000 additional charging stations along the Trans-Canada Highway and other major road networks and in Canada's urban and rural areas;
- Work to position Canada as a global leader in clean technology, including in critical minerals;
- Work in partnering with provinces, territories, and Indigenous peoples to advance the electrification of Canadian industries through new, zero-carbon clean electricity generation and transmission systems and grid modernization, making Canada home to the cleanest mills, mines and factories in the world;
- Support the transition of Indigenous communities from reliance on diesel-fueled power to clean, renewable and reliable energy by 2030;
- Make Energy Star certification mandatory for all new home appliances starting in 2022;
- Launch a national competition to create four long-term funds to help attract private capital that can be used for deep retrofits of large buildings such as office towers; and,
- Work to operationalize a plan to help Canadians make their homes more energy efficient and climate resilient. This will include providing free energy audits to homeowners and landlords, up to \$40,000 in interest-free lending for retrofits that will save Canadians money on their energy use, a cash incentive for borrowers to maximize their energy savings, and creating a Net Zero Homes Grant of up to \$5,000 for newly built homes that are certified net zero-emissions.

Planning highlights

With the objective of ensuring that Canada’s natural resource sectors remain innovative and are sustainably developed, NRCan will foster clean technology innovation across Canada’s energy, mining and forest sectors through several of its programs and initiatives. The Department will also explore potential operational applications of Artificial Intelligence (AI) to support efforts to transition to a low-carbon economy. Recent experience has demonstrated that federal investment in new technology has enhanced Canada's competitive advantage, diversified market opportunities, created good middle-class jobs, and contributed to meeting Canada’s emission reduction targets.

NRCan works to ensure that the natural resource sectors are innovative

In 2020-21, NRCan will see early results emerging from the plans and initiatives that were spurred by Canada’s efforts to meet its **Mission Innovation (MI)**^{cvii} commitment of doubling its investments in clean energy innovation (from \$387 million in 2014-15 to \$775 million in 2019-20). These investments in clean energy innovation ensures that technologies are affordable while driving economic growth.

As part of the **Impact Canada Initiative**,^{cviii} NRCan will continue, through its six prize-based **Clean Technology Challenges**^{cix} to unlock breakthrough solutions to the complex problems of: decarbonizing aviation; modernizing power grids; designing better batteries; slashing energy used in mining; increasing the participation of women in the clean technology sector; and, reducing reliance on diesel in Indigenous and remote communities. In 2020-21, four of these grand prizes will be awarded, delivering high-impact solutions to tough problems while fostering stakeholder innovation throughout the targeted sectors.

Canada’s forest sector is a leader in the bioeconomy as a result of world-class forest management and technological advances. Bioeconomy allows wood and forest fibre residues to be transformed into high-value bio-products, chemicals and fuels. The

Government of Canada is committed to the bioeconomy and will work with the provinces and

Women in Cleantech Challenge

This Challenge was designed to have a meaningful impact on the underrepresentation of women in Canada’s clean technology sector by supporting a cohort of entrepreneurs with the resources – financial, business, and technical – that they need to be globally competitive. The six Challenge finalists receive a stipend that allows them to work full-time on their venture; incubation support services from MaRS Discovery District; science and technology expertise from federal labs; and a showcase to highlight their successes to serve as an inspiration for the next generation of female clean tech entrepreneurs.

In 2020-21, at the end of the 2.5-year incubation period, the entrepreneur with the most promising technology will receive an additional \$1 million investment to further scale her business.



CEM-10/MI-4, May 2019. Session: Impact Canada: Driving Innovation with Prize Challenges. Women in Cleantech Challenge Panel

territories to deliver on a national vision to make Canada a global leader. More specifically, NRCan is implementing its innovation programming through its science and technology capacity in forest science, wood-science, and genomics. In 2020-21, the Department will continue to champion the bioeconomy in federal programs. Since 2017, more than \$528 million has been invested to accelerate the deployment of solutions in areas such as low-carbon construction and other low-carbon proposals, reducing diesel reliance for rural, remote, and Indigenous communities and increasing clean growth in the forest industry.

Similarly, the **Green Mining Innovation^{cx}** program will support new and clean mining technologies and innovative practices in mineral resource development to minimize waste generation and improve overall productivity in the Canadian mining industry.

Example of Bio-Energy Projects

In 2020-21, examples of NRCan's bio-energy projects include:

BioSalix Program: NRCan researchers, in collaboration with local governments and a diverse range of private companies, will address an increased demand for management of organic residuals from natural resource projects. The residuals will be used to improve topsoil on reclaimed mine land. On these sites biomass crops will be grown for use as feedstock in clean energy, reclamation or for other bioproducts.

Tetlit Zeh Forestry and Bioenergy Project: NRCan will be working collaboratively with the Indigenous community of Fort McPherson, NWT to develop bioenergy fuel sources. Bioenergy would replace diesel to reduce costs and minimize the environmental footprint. The project also seeks to increase local employment and autonomy through the development and management of tree plantations for energy independence.

NRCan supports clean technologies and energy-efficiencies that enhance economic performance

Canada's natural resource sectors are increasingly technology-intensive, where data-driven digital innovation is now critical in reducing costs, creating well-paying jobs for a diverse workforce, improving productivity, lessening environmental impacts, and enhancing safety. In 2020-21, NRCan will pursue applying transformative digital technologies like AI and Big Data tools and techniques, both internally and with partners, to solve challenges, optimize productivity, enhance automation, streamline regulations and increase energy efficiency in natural resources sectors.

In particular, NRCan will work with partners in industry, academia, and other levels of government to support the digital innovation that the natural resource sectors need to be a sustainable and be a low-carbon contributor to Canada’s competitive economy. The Department will continue to implement the **NRCan Digital Accelerator Initiative**, established in 2019, to support NRCan scientists’ use of advanced AI and machine learning techniques.

In efforts to enhance science-informed decision-making, the Department will undertake research in quantum science and technologies of relevance to NRCan’s mandate. Quantum technology, which combines knowledge from physics and engineering to examine how matter and energy behave at the nanoscale, will create a wide variety of applications including in the areas of internet communications and security; metrology and instrument systems; and energy and mineral resource sensing. NRCan will prepare a report outlining perspectives on research for the natural resources sector.

Digital Accelerator



The Digital Accelerator project seeks to create a digital vision and strategy for NRCan and the partners that we work with. The project will also increase the development and use of advanced digital solutions for the department’s science, programs and policies. The Department is well positioned as a leader in advancing digital innovation in the natural resource sectors, leveraging decades of experience in data analytics, practices and technologies suited to a digital-first approach, and wide-ranging policy and program expertise.

Digital innovation can drive clean, sustainable growth for natural resource sector competitiveness in all areas of NRCan business – including internal policy, programs and operations; it can impact Canadians and the economy by reducing costs, accelerating productivity through automation and improved accuracy.



Members of NRCan’s Digital Accelerator team

Widespread adoption of low-carbon technologies, including high-efficiency heating technologies for the built environment, is a critical component of Canada’s low-carbon transition. This will provide significant economic benefits to consumers and businesses. The **Energy Efficient Buildings Program**^{cxii} will continue to fund projects that aim to reduce costs and drive adoption of high-performance and net-zero-energy ready building technologies and practices by Canada’s construction industry.

Through the \$1B investment provided to the **Green Municipal Fund**^{cxiii} in Budget 2019, NRCan works closely with the **Federation of Canadian Municipalities**^{cxiii} to roll out programs to drive retrofits in social housing, establish innovative financing models for home retrofits, reduce emissions from large municipal buildings and fund innovative retrofits through urban climate action centre situated across Canada.

At the same time, the Government will be relying on private Canadian investors to help finance the transition to a low-carbon and climate resilient economy as public funds alone cannot meet the significant investments required. To this end, the Department is considering how to connect investors to the opportunities presented by the transition – an estimated \$26 trillion market. Over the next year, work will continue with provincial and territorial counterparts to increase awareness on sustainable finance and climate-risk financial disclosure.

Through the **Energy Innovation Program**^{cxiv} (EIP), NRCan will pursue clean energy innovation by funding government and private-sector research, and development and demonstration projects to reduce GHG emissions. The EIP fosters innovations that make technology more affordable and reliable in key areas such as renewable energy; smart grids; energy-efficient buildings; carbon capture, use and storage; and the cleaner production of petroleum. A key result is increased competitiveness of Canada’s energy sector.

Energy Innovation Program (EIP)

By 2030, EIP is expected to result in 10-16 megatons (4.25 direct) of GHG emissions reductions annually. In particular, the EIP includes:

- **Breakthrough Energy Solutions Canada (BESC)**, a joint initiative of NRCan; Breakthrough Energy, led by Bill Gates and influential global investors; and the Business Development Bank of Canada that was launched at Mission Innovation’s 4th Ministerial meeting in May 2019. BESC will provide up to \$40 million to help Canadian firms develop and commercialize clean energy technologies with potential for significant greenhouse gas emissions reductions (0.5GT/year globally).
- The **Canadian Emissions Reduction Innovation Network (CERIN)** is a collaboration between NRCan and Alberta Innovates to support the innovation needed to bring clean tech to market in order to help the oil and gas industry to meet emission regulations in a cost-effective way, notably by funding technology testing infrastructure at key research and industry facilities in Alberta and nationally.



Breakthrough Energy Solutions Canada Forum 2020, Jan. 14, 2020: Panel - Investor Expectations and Clean Energy Investment Trends

In 2020-21, NRCan's **Canmet energy, mining and materials research facilities** will continue to advance innovative technologies, creating jobs, generating intellectual property in Canada and valuable expertise and growing the natural resource sector, including clean technologies.

NRCan continues to fund the world class research by scientists and engineers at these research centres and at other federal energy research facilities through the **Program of Energy Research and Development (PERD)**^{cxv} and **EIP**.^{cxvi} Their innovative research and development projects will focus on addressing innovation gaps in key priority areas such as clean electricity and transportation; sustainable bioenergy; cleaner fossil fuels; energy efficiency; and value-added advanced materials for the energy, transportation and manufacturing sectors.

Through the **Clean Growth Program (CGP)**,^{cxvii} the Department is providing \$155 million over five years for 50 research, development and demonstration projects in Canada's energy, mining and forestry sectors. The **CGP** is continuing to advance emerging clean technologies toward commercial readiness, reduce environmental impacts, enhance competitiveness, and create jobs. Projects are co-funded through trusted partnerships with provinces and territories, a newly-adopted mechanism that aims to speed up approval processes and leverage additional funds from project partners. To support innovation by small and medium sized enterprises (SMEs), the **CGP** includes the novel **Science and Technology Assistance for Cleantech (STAC)** initiative, which provides SMEs funded under the **CGP** with access to scientific and technical resources at federal research centers to help them overcome a lack of technical expertise and research infrastructure.

Building on its early successes, the **Clean Growth Hub**,^{cxviii} led jointly by NRCan and ISED, will continue to serve as the Government of Canada's focal point for clean technology, connecting producers and adopters. Federal supports, coordinating between programs, and improving tracking and results for clean technology.

NRCan will maintain its lead role in the **Mining Value from Waste Program**,^{cxix} a pan-Canadian initiative under the **Green Mining Innovation**^{cxx} banner. The initiative is focused on reducing the environmental, social and economic footprints of mine wastes in support of the transition to a circular economy. NRCan will also continue directing a **Canadian Mining**

Adoption of green mining technologies

In 2020-2021, NRCan will develop innovative processes and technologies to:

- Recover rare earth elements by developing novel low-temperature processes that result in decreased energy consumption, and capital and operating costs, and improved environmental performance;
- Improve detailed understanding of environmental issues associated with chromite smelting, reduce liabilities by investigating the opportunity to utilize slag, and further validate a novel smelting technology with lower energy demand;
- Optimize the use of energy in grinding process by developing techniques to accurately measure ore hardness and size distribution and developing effective control strategies and appropriate corrective actions;
- Optimize rock fragmentation to improve ground stability in deep mining applications; and,
- Advance adoption of hydrogen-powered electric vehicles in mining while optimizing electricity use from the additional demand from these vehicles.

Science and Engineering Laboratory Network, to pursue collaborative innovation in science in the Canadian minerals and metals industry.

NRCan helps ensure Canada's natural resources are sustainable

As the Department continues to implement programs that support the **Pan-Canadian Framework on Clean Growth and Climate Change (PCF)**,^{cxxi} it will also introduce additional carbon reduction measures that support exceeding the current 2030 targets and firmly put Canada on a trajectory to net-zero emissions by 2050. Under the **Green Infrastructure (GI)**^{cxxii} stream of the **Investing in Canada Plan**,^{cxxiii} which supports the PCF, NRCan is investing in the demonstration and deployment of clean energy infrastructure through several programs: **Smart Grids**,^{cxxiv} **Energy Efficient Buildings**,^{cxxv} **Emerging Renewable Power**, **Clean Energy for Rural and Remote Communities**,^{cxxvi} **Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative**,^{cxxvii} and **Electric Vehicle Infrastructure Demonstrations (EVID)**.^{cxxviii}

NRCan will continue to work with partners to implement the recommendations of the **Generation Energy Council report**,^{cxxix} which proposed pathways to the Government of Canada on how to build Canada's energy future. These pathways include making smarter use of energy, switching to clean power, using more renewable fuels and producing cleaner petroleum, and increasing Canada's economic competitiveness and energy sustainability.

Through the **Green Infrastructure Programs**,^{cxxx} NRCan is advancing the modernization of energy efficiency related codes and standards across Canada. NRCan is performing targeted research and development activities in support of building codes development and high-performance buildings, and supporting the **National Research Council's**^{cxxxi} development of more stringent model building codes for new and existing buildings by 2022-23 (to be published in 2025). Currently, targeted research and development activities in support of building codes development and high-performance buildings are underway. The **Local Energy Efficiency Partnerships (LEEP) program**^{cxxxii} delivers workshops, technology forums, field trials and publications to accelerate industry uptake of energy-efficient technologies. The Department is also collaborating with provinces and territories on code adoption and implementation.

In Canada, 17 percent of GHGs come from homes and buildings. Canada has a plan for new and existing buildings to make smarter use of energy. The **Energy Efficient Buildings Program**^{cxxxiii} under GI supports **Build Smart**, a federal, provincial and territorial strategy to make new buildings more energy efficient; bring existing buildings into an energy efficient future; improve efficiency of appliances and equipment; and, label and disclose building energy use to provide information to better manage energy demand.

NRCan will also take concrete actions to help Canadians and businesses switch to clean power, as part of the beginning of a widespread transformation of the electricity sector. This will entail collaborating with the provinces and territories, and with Indigenous peoples to advance the

electrification of Canadian industries. NRCan will support the implementation of the **Clean Power Road Map for Atlantic Canada**,^{cxxxiv} pursue work with British Columbia under the **Memorandum of Understanding on the Electrification of the Natural Gas Sector**,^{cxxxv} which includes liquefied natural gas, and continue to support off-diesel projects across the country. In addition, NRCan's **Smart Grid Program**^{cxxxvi} under GI supports the modernization of the electricity grid, ensuring that renewables can be incorporated into the grid while accommodating increased electrification of sectors such as transportation.

NRCan, with INFC, will further advance electrification, zero-carbon electricity generation, transmission systems and grid modernization. NRCan will also continue to support the transition of Indigenous communities from reliance on diesel to clean, renewable and reliable energy by 2030. For example, the **Clean Energy for Rural and Remote Communities Program**^{cxxxvii} and the **Impact Canada Indigenous Off-Diesel Initiative**^{cxxxviii} encourage energy efficiency, support community-led renewable energy, and build community capacity to own and operate renewable energy systems, while providing important economic opportunities and promoting energy self-reliance.

In collaboration with stakeholders, recommendations from the **Canadian Small Modular Reactor (SMR) Roadmap**^{cxxxix} will be implemented to reduce GHG emissions and capture benefits for Canada and Canadians. **Small modular reactors (SMRs)**^{cxli} are a new class of nuclear reactors significantly smaller in size and power output than conventional nuclear power reactors. The technology has the potential to unlock new domestic and global market opportunities for clean, non-emitting electricity in a number of different applications including power grids (to replace coal plants), heavy industries such as mining and petroleum production, and remote communities. The momentum behind SMRs is growing domestically and abroad.

The Department is also supporting progress towards a low-carbon transportation sector through the delivery of programs for both passenger vehicles and the freight sector. One area is a national **Zero Emission Vehicle Strategy**^{cxlii} for Canada to deploy more low-emission vehicles on Canadian roads. This will support the government-wide **Clean Fuel Standard Initiative**,^{cxliii} providing incentives for the use of a broad range of low-carbon fuels, energy sources and technologies - such as electricity, hydrogen and renewable fuels, including renewable natural gas.

The **Electric Vehicle Infrastructure Demonstration Program**^{cxliiii} under GI further facilitates the uptake of EV and hydrogen infrastructure by funding real-world demonstrations of next-generation, innovative EV and hydrogen charging infrastructure projects across Canada. These investments address technological gaps and overcome barriers to the implementation of EV and hydrogen infrastructure, such as cost, safety, function in cold climates, charging speed, interoperability, grid integration and load management. NRCan continues to implement the **Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative** under GI. The

intent is that by 2024, there will be an increase in the number of public EV and alternative fuel facilities available across Canada to 1,000 EV fast chargers coast-to-coast; 22 natural gas chargers along freight routes; and 15 hydrogen chargers in metro areas.

For more than two decades, Canadian companies have been world leaders in the development of hydrogen technologies. NRCan will continue to work with key stakeholders, and government at all levels, to take concrete steps to further advance hydrogen technologies as a means to introduce cleaner fuels and support Canada's effort to boost its competitiveness, as well as reduce emissions.

NRCan will work in collaboration with the energy industry to help fulfill the goal of transforming Canadian oil and gas into the cleanest global petroleum sector. This will involve engaging and collaborating with key industry players and innovation leaders to focus on strategies that minimize energy consumption and GHG emissions related to petroleum development while remaining competitive. Central to this goal is building on the relationships that NRCan has already established with industry and provincial partners in supporting research development and deployment (RD&D) towards achieving GHG, and economic, social and governance targets.

The Government is developing a modern and independent energy information system through the establishment of the **Canadian Centre for Energy Information (CCEI)**.^{cxliiv} Once operational, the CCEI will provide Canadians with access to independent and credible information to base important energy decisions for their businesses, communities, and the environment. The CCEI is a partnership between NRCan and Statistics Canada, where it will be housed, working closely with the **Canada Energy Regulator (CER)**^{cxlv} and ECCC. It will be guided by a federal-provincial-territorial steering committee and will seek advice from Canadians, Indigenous peoples, industry, academics and municipalities.

In 2020-21, NRCan will increase carbon storage and reduce Canada's GHG emissions by implementing a suite of natural climate solutions, in collaboration with other federal departments, provinces, territories, municipalities, Indigenous organizations and communities, Indigenous peoples, the private sector, and other stakeholders. This includes planting two billion trees over the next 10 years; expanding and diversifying Canada's urban forests; supporting the emerging bioeconomy, to increase the use of long-lived wood products in place of emission-intensive alternatives; enhancing forest management practices; and, supporting reforestation efforts following disturbances such as pest infestations or wildland fire. Targeted research will help support the Government and key stakeholders in their efforts to enhance and manage Canada's forests in a sustainable way, contributing to federal biodiversity targets.

In July 2020, federal, provincial and territorial ministers responsible for energy and mining portfolios across Canada will gather in Whitehorse, Yukon for the annual **Energy and Mines**

Ministers' Conference (EMMC).^{cxlvi} At this meeting, ministers will discuss shared priorities for collaborative action to advance energy and mining developments across the country. In September 2020, under the chairmanship of the Northwest Territories, the next meeting of the **Canadian Council of Forest Ministers (CCFM)**^{cxlvii} will take place 2020 in Yellowknife. In addition to the ongoing priority of advancing the forest bioeconomy, climate change and Indigenous engagement in the forest sector will be key themes for this meeting.

United Nations' 2030 Agenda and Sustainable Development Goals (SDGs)

NRCan's planned activities under this Core Responsibility support Canada's efforts to address the UN 2030 Agenda and the achievement of several Sustainable Development Goals (SDG).

For example, in support of **SDG 7 – Affordable and Clean Energy**,^{cxlviii} the **Clean Energy for Rural and Remote Communities (CERRC)**^{cxlix} program and the **Impact Canada Indigenous Off-Diesel Initiative**^{cl} help reduce the reliance on diesel fuel for heat and power, support community-driven clean energy solutions and create green jobs and opportunities. Through the **Smart Grid**^{cli} program, funds are allocated to assist electric systems to make better use of renewable energy, and help renewable power capacity.

The **Energy Efficient Buildings and Electric Vehicle and Alternative Fuels Infrastructure Initiative** programs support **SDG 9 – Industry, Innovation and Infrastructure**^{clii} by increasing energy efficiency in buildings and developing electric vehicle charging infrastructure. Projects under these programs work to ensure that Canada's infrastructure is innovative and more climate resilient.



Electric cars connected to charging station

Similarly, the **Energy Innovation Program (EIP)**^{cliii} and the **Clean Growth Program (CGP)**^{cliv} support **SDG 12 – Responsible Consumption and Production**^{clv} through development and demonstration of clean energy technologies, which help reduce GHG. In addition, they contribute to **SDG 8 – Decent Work and Economic Growth, full and productive employment, and decent work for all**^{clvi} by enhancing Canada's economic competitiveness, and creating jobs in clean technology.

The **Sustainable Forest Management**^{clvii} program supports **SDG 15 – Life on Land**^{clviii} by making available new information and tools for forest practitioners, ensuring a more sustainable and responsible low-carbon economy.

Additional information about how NRCan activities support United Nations' 2030 Agenda and Sustainable Development Goals will be reflected under the NRCAN 2020-23 Departmental Sustainable Development Strategy. Altogether, they will support Canada's transition to low-carbon future and help meet the Government's target to achieve net-zero emissions by 2050, while providing access to affordable, reliable, sustainable and clean energy, promoting innovation, ensuring sustainable economic growth and ecosystems.

Departmental Risk

NRCan has identified a number of risks under this Core Responsibility, including related to the impact of climate change and keeping abreast of the rapid pace of science and technological innovation.

NRCan will continue to manage these risks through the development, implementation and monitoring of mitigation strategies, including:

- Building on the recommendations from the [Generation Energy Council report](#),^{clix} which proposed pathways to the Government of Canada on how to build Canada's energy future;
- Supporting federal green initiatives and government efforts to meet the Paris agreements to reduce GHG emissions and for Canada to achieve net-zero emissions by 2050, such as:
 - Pursuing natural solutions to the effects of climate change like the planting of two billion trees over the next 10 years;
 - Accelerating adoption of clean and renewable energy technologies;
 - Supporting progress towards a low-carbon transportation sector;
 - Advancing electrification, zero-carbon electricity generation, transmission systems and grid modernization; and,
 - Continuing to reduce the environmental footprint of mine wastes.
- Providing federal leadership and scientific expertise to advance sustainable energy technologies and solutions to pressing environmental challenges; and,
- Making investments and working collaboratively with different levels of government and Indigenous peoples to reduce GHG emissions.

Gender-Based Analysis Plus (GBA+)

Natural Resources Canada is using Gender-Based Analysis Plus (GBA+) to rigorously assess all Treasury Board Submissions, Memoranda to Cabinet and Budget proposals for potential impacts or implications on diverse populations of Canadians. This allows the department to respond to potential barriers while facilitating more inclusive and equitable opportunities and outcomes.

For example, under the **Core Responsibility – Innovation and Sustainable Natural Resources Development**, the **Electricity Resources Program** encourages sustainable growth in the electricity sector by providing communities with job opportunities, skills and training. For instance, the program collects, disaggregates and tracks data for renewable energy projects in remote areas, by rural and remote community (region), Indigenous ownership and participation with specific attention to data on women and youth to ensure inclusive outcomes for Canadians.

Moreover, the **Lower Carbon Transportation Program** also contributes to GBA+ considerations at NRCan. This program seeks to determine how the uptake and impact of lower carbon transportation options and awareness efforts vary by demographics to ensure inclusive outcomes for Canadians. Since 2019-2020, data can be disaggregated by province and territory for at least 10 different indicators, and by gender, age group, income level, and province and territory, for another three indicators. This will help determine how the uptake and impact of lower carbon transportation options and awareness efforts vary by location and by various demographic groups. In addition, the program will measure the number of job-years of employment generated by funded projects, and will disaggregate the data by province and territory, gender, and age group.

This GBA+ analysis serves to ensure that NRCan actively promotes diversity in the department's proposed policies, programs, initiatives and services. For further information on GBA+ at NRCan, please refer to the *GBA+ Supplementary Information Table*.

Experimentation in Energy Efficiency

Continuing its work in leading the transformation to a low-carbon economy, NRCan is building multisector partnerships, exploring different approaches to encourage the uptake of energy efficient actions. These may include examples such as nudging home retrofits, reducing energy consumption at home, at work and on the road.

In 2020-21, NRCan will aim to further explore how digital principles and approaches can be applied to encourage energy efficiency behaviours. This could include innovative ways to present energy consumption information to the public to make their energy use more visible and encourage them to reduce their energy consumption. This work will use a user-centered approach by directly engaging with partners (e.g. public and private sectors, academia), as well as the general Canadian public.

Planned Results for Innovative and Sustainable Natural Resources Development

Departmental result	Departmental result indicator	Target	Date to achieve target	2016–17 Actual result	2017–18 Actual result	2018–19 Actual result
Natural resource sectors are innovative	Percentage of NRCan-funded innovation projects that result in new intellectual property, standards or regulations	At least 5% of projects will have IP or an impact on codes, standards or regulations by project completion (typically 3-4 years)	March 2021	42% (From eco-Energy Innovation Initiative) ⁸	Not Available	65% ⁹
	Percentage of innovative forest products and decision tools informed by NRCan research that contribute to the environmental sustainability of Canada's forests	At least 90%	March 2021	Not Available ³	Not Available ³	100%

⁸ Results provided are for reference from the ecoEnergy Innovation Initiative, the predecessor to the Energy Innovation Program. Due to differing objectives between programs and individual projects, these results cannot be treated as baseline or comparative for new programs implemented in 2017-18 and 2018-19 as part of Budget 2017 announcements.

⁹ This indicator tracks progress on results at the completion of NRCan-funded projects in 2021. The 2018-19 result shows interim progress based on the projects completed to date; 65% of them have resulted in intellectual property or have had an impact on codes, standards and regulations.

	Percentage of NRCan-funded clean energy innovation projects advancing along the innovation scale	At least 50% of research, development and demonstration projects advance one level on the technological readiness scale by project completion (typically 3-4 years)	March 2024	86% (From eco-Energy Innovation Initiative) ⁸	Not Available	90% of completed projects advanced one TRL level ¹⁰
	Percentage of innovative mining technologies developed by NRCan that move towards being ready for commercial use	At least 25%	March 2021	Not Available ³	Not Available ³	25%

¹⁰ This indicator tracks progress on results at the completion of NRCan-funded projects. NRCan will report progress in future Departmental Results Reports. The 90% figure represents only a fraction of the full program portfolio and is provided only as an indication of progress to date.

Clean technologies and energy efficiencies enhance economic performance	Percentage of NRCan-funded clean technology demonstration projects achieving their economic goals	At least 50% success rate measured by project completion (typically 3-4 years)	March 2026	Not Available ²	Not Available ²	Not Available ¹¹
	Ratio of partner investment to government spending in NRCan-funded energy innovation projects	At least 1:1 ratio of partner investment to NRCan investment	March 2021	0.8:1	2.6:1	3.1:1
	Total annual energy savings resulting from adoption of energy efficiency codes, standards and practices	Annual savings of at least 600 petajoules (PJ)	March 2030	Not Available ¹²	20.0PJ ¹³	26.7PJ

¹¹ This indicator tracks progress on results at the completion of NRCan-funded projects. No projects with economic goals were completed during 2018-19.

¹² The standards for calculation of energy efficiency have changed since 2017 and the results for prior years for this indicator are not comparable.

¹³ The 2017-18 results have been revised to ensure application of consistent methodologies and baselines used in the calculation of the results. The petajoule savings resulting from improved building code standards is now based on the 2015 National Energy Code for Buildings (NECB), instead of the 2011 NECB, which reduced the savings attributed to improved building codes. As a result, the petajoules saved in 2017-18 have been revised to 20.0 rather than the 27.4 petajoules that were previously reported in the 2019-20 Departmental Plan.

Canada's natural resources are sustainable	Percentage of Canadian electricity generated from non-GHG emitting sources	At least 90%	March 2030	80.8%	81.6%	82.0%
	Number of renewable energy projects in remote communities and off-grid industrial operations	At least 100	March 2024	Not Available ¹⁴	Not Available ¹⁴	0 ¹⁴
	Amount of wood harvested compared to the sustainable supply	Harvest is less than sustainable supply	March 2021	148 million m ³ total harvest versus total wood supply of 227 M m ³ (SoF, 2016 – data from 2014) ¹⁵	160 million m ³ total harvest versus total wood supply of 226 M m ³ (SoF, 2017 – data from 2015) ¹⁵	155 million m ³ total harvest versus total wood supply of 223 M m ³ (SoF, 2018 – data from 2016)
	Number of low-carbon recharging and refueling stations under development or completed	At least 1000 electric vehicle charging stations At least 22 natural gas refuelling stations At least 15 hydrogen refuelling stations	March 2024	Not Available	Electric vehicle charging stations = 102 Natural gas refuelling stations = 7 Hydrogen refuelling stations = 3 Grand Total = 112	Electric vehicle charging stations = 526 Natural gas refuelling stations = 12 Hydrogen refuelling stations = 6 Grand Total = 544

¹⁴ This is a new indicator implemented in 2018-19, which measures the number of completed renewable energy projects in remote communities and off-grid industrial operations. Past actuals are not available as the indicator tracks a new program that began in January 2018. In 2018-19, NRCan selected 53 projects for participation in the Clean Energy for Rural and Remote Communities Program.

¹⁵ The Actual Results in 2016-17 and 2017-18 have been revised from what was included in the 2019-20 Departmental Plan to reflect consistency with the State of Canada's Forests Report.

	Reduction in greenhouse gas emissions resulting from NRCan-funded clean technology demonstrations	<p>Clean Growth Program: Between 0.3 - 0.7 megatons (Mt) of direct annual GHG reduction, dependent on projects received, success of projects and on-going operation at full production capacity</p> <p>Energy Innovation Program: Between 4.25 Mt of direct annual GHG reductions and a combined total 10-16 Mt of GHG direct and indirect reductions per year</p>	<p>March 2026 (Clean Growth Program)</p> <p>March 2030 (Energy Innovation Program)</p>	<p>Clean Growth Program: Not Available²</p> <p>0.8 Mt/year (From eco-Energy Innovation Initiative)¹⁶</p>	<p>Clean Growth Program: Not Available²</p> <p>Energy Innovation Program: 1.2 Mt/year¹⁸</p>	<p>Clean Growth Program: Not Available¹⁷</p> <p>Energy Innovation Program: 1.32Mt/year¹⁸</p>
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¹⁶ Result provided is for reference from 2016-17 ecoEnergy Innovation Initiative project reports, the predecessor to the Energy Innovation Program.

¹⁷ This indicator tracks progress on results at the completion of NRCan-funded projects. No projects were completed during 2018-19, as projects were at the early stages of implementation.

¹⁸ On track for 2026 and 2030 targets. Projects are just now underway and only represent a small percent of the final target.

	Percentage of NRCan's projects on innovation and sustainable development that engage Indigenous communities, organizations or governments	To be determined in 2020-21 ¹⁹	March 2021	Not Available ³	Not Available ³	Not Available ³
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Planned budgetary financial resources for Innovative and Sustainable Natural Resources Development

2020–21 budgetary spending (as indicated in Main Estimates)	2020–21 planned spending	2021–22 planned spending	2022–23 planned spending
\$610,218,394	\$610,218,394	\$477,529,144	\$367,749,761

Planned human resources for Innovative and Sustainable Natural Resources Development

2020–21 planned full-time equivalents	2021–22 planned full-time equivalents	2022–23 planned full-time equivalents
1,581	1,466	1,447

Financial, human resources and performance information for the Natural Resources Canada's program inventory is available in the [GC InfoBase](#).^{clx}

¹⁹ The target will be determined based on 2020-21 baseline data.



Globally Competitive Natural Resource Sectors

Description

Advance and promote market access, inclusiveness and competitiveness for Canada's natural resource sectors, in support of jobs and economic growth.

This Core Responsibility supports the advancement of the following **Strategic Priorities**:

- Accelerating the adoption of clean technology and supporting the transition of a low-carbon future
- Improving market access and competitiveness in Canada's resource sectors
- Supporting resource communities and workers in a low-carbon economy
- Advancing reconciliation, building relationships, and sharing economic benefits with Indigenous peoples

This Core Responsibility also contributes to the achievement of the **Mandate Letter Commitments** of the Minister of Natural Resources:

- Identify opportunities to support workers and businesses in the natural resource sectors that are seeking to export their goods to global markets. This includes working to construct and complete the twinning of the Trans Mountain Pipeline;
- Work with partners to implement the Canadian Minerals and Metals Plan and to develop strategies to help strengthen the competitiveness and overall health of Canada's forest sector;
- Work to position Canada as a global leader in clean technology, including in critical minerals;
- Work to develop a new national benefits-sharing framework for major resource projects on Indigenous territory;
- Ensure the efficient and effective implementation of the *Canadian Energy Regulator Act*; and,
- Work with partners to advance legislation to support the future and livelihood of workers and their communities in the transition to a low-carbon global economy.

Planning highlights

Canada is globally known for its vast natural resources assets and remains one of the world's most attractive countries for investment in sustainable natural resources development. The world is increasingly demanding raw materials and finished goods that are sustainably produced and competitively priced. Canada, with its natural advantage in resource development, is ideally positioned to be a supplier of choice in the global marketplace, building on its expertise and experience to develop them sustainably and competitively.

Efforts will be intensified to diversify trade of Canada's energy, mining and forest sectors. Collaboration with provincial and territorial counterparts and Indigenous peoples to strengthen the competitiveness of our natural resource sectors will be essential to achieve this goal; as will the transition to cleaner energy sources, advancing climate actions to meet the Paris agreements to reduce GHG emissions, and Canada's commitment to achieve net-zero emissions by 2050.

NRCan is working to enhance access to new and priority markets for Canada's natural resources

NRCan recognizes the important role of infrastructure for trade diversification and the need to address market access. Existing infrastructure challenges have hampered the competitiveness of several Canadian resource sectors and forced some Canadian producers to sell their products at a significant discount.

NRCan will continue to advance the development of major infrastructure projects to increase market access for Canadian resource producers, including the [TMX Project](#).^{clxi} Once completed, the TMX Project will allow Canada to get a fair price for its oil and support workers involved in the energy sector while delivering revenues that will help fund Canada's clean energy transition.

By creating prosperity today, Canada can invest in the clean jobs, technologies, and infrastructure of the future and help Canadians benefit from opportunities presented by a rapidly changing economy. TMX will create thousands of good, middle-class jobs; unlock new global markets to boost the price of Canadian oil; generate billions in revenues each year to help fund clean energy solutions; and help advance reconciliation with Indigenous peoples, including through economic opportunity.

NRCan will support the commitment to invest every dollar the federal government earns from the Project in Canada's clean energy transition, this includes any net proceeds from the eventual sale of the Project.

The Project will adhere to 156 conditions that include comprehensive and evergreen safety, spill prevention and emergency response plans. It will also leverage current and new technologies as they become available to transport crude oil safely while protecting the environment.

In fulfilling its duty to consult and in the spirit of reconciliation with Indigenous groups, the Government has developed and is implementing accommodation measures to help bridge the gap between addressing the impact Indigenous rights and other project-related concerns identified during consultations. These measures are intended to improve marine safety, spill prevention, and response capacity; study and address cumulative effects, fish and fish habitat; advance further terrestrial studies; and invest in new research for quieter vessels. The Government will also implement other specific commitments it has made to Indigenous groups and the [CER's 16 Recommendations](#).^{clxii} This work will be done collaboratively with DFO, CCG, TC, and ECCC.

Lead federal departments responsible for implementing the accommodation measures have taken important early steps to advance the measures in cooperation with Indigenous communities. NRCan is specifically responsible for the Terrestrial Studies Initiative. To date 36 contribution agreements have been signed with Indigenous communities and three Traditional Land Use Studies are complete.

NRCan is committed to maintaining relationships with Indigenous communities as TMX moves forward. This includes working together on initiatives related to Crown commitments, accommodation measures, or any other TMX-related activities. To this end, NRCan's Phase IV Partnerships Office was created in June 2019 to serve as a focal point for Indigenous communities and the Government to work collaboratively to implement the commitments and accommodation measures.

Construction of the pipeline is progressing. The first section of pipe was laid in the ground in Alberta in December 2019 on schedule. NRCan continues to work closely with provincial and federal regulatory authorities as well as Trans Mountain Corporation to monitor the whole of the permitting and authorization process, compliance with regulatory conditions and construction timelines and activity.

The Department will also move forward to support the implementation of the [Canadian Energy Regulator Act](#)^{clxiii} and the [Impact Assessment Act](#),^{clxiv} which will help Canada provide regulatory stability for investors while recognizing the connection between the environment and the economy. Work includes advancing regulations and guidance to support the implementation of the CER.

In 2020-21, NRCan will continue to facilitate meaningful Indigenous participation in natural resource governance. NRCan will support the monitoring and oversight work of the [Indigenous Advisory and Monitoring Committees](#)^{clxv} for the Line 3 Replacement and TMX Projects as these projects evolve through their lifecycles. There will also be consultations with potentially impacted Indigenous peoples on major resource projects currently being assessed under the grandfathered [Canadian Environmental Assessment Act \(CEAA\) 2012](#)^{clxvi} and the [National Energy Board Act](#).^{clxvii}

In the Atlantic offshore, NRCan will work with the IAAC, the Governments of Newfoundland and Labrador and Nova Scotia, and the Offshore Petroleum Boards to implement the *Impact Assessment Act*. This includes upholding commitments to complete regional assessments and related regulations required to exempt lower-impact activities, such as exploratory drilling, from the need to undergo a project-specific impact assessment, while upholding the strongest environmental protections.

NRCan will also target new and priority markets for Canada's natural resource sectors to support businesses seeking to export their goods, services and technologies to global markets. The Department will seek to enhance market integration, competitiveness and free trade in natural resources by leveraging trade agreements such as such as the **Canada-US-Mexico Agreement (CUSMA)**,^{clxxviii} the **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**^{clxxix} and the **Canada-EU Comprehensive Economic and Trade Agreement**.^{clxxx} At the same time, NRCan will continue to build constructive energy relations with key markets in North America, Asia, Europe and the Middle East to promote Canada as a secure, reliable, and sustainable supplier of natural resources products, services, and technologies, as well as a competitive investment destination and preferred trade partner including by increasing inward and outward missions.

Effective implementation of the CUSMA and its **Canada-US side agreement on energy**^{clxxxi} will be important. CUSMA will help save the Canadian energy sector millions annually in unnecessary costs, remove barriers to the trade of energy efficiency goods and services, and further energy development through greater cooperation and enhanced regulatory and transparency measures.

The Department will continue to pursue collaboration with the United States and Mexico. The U.S. is Canada's top market for energy, and Canada works closely with Mexico in the context of a deeply integrated North American energy market. In 2020-21, activities will include providing North American network of missions with advice and information to support advocacy for cross-border energy infrastructure to support trade. NRCan will also engage with the U.S. and Mexican government departments to promote a North American approach to energy supply chains or technology development, including for nuclear fuels or clean energy technologies.

In 2020-21, the pursuit of bilateral and multilateral engagements will continue with international institutions and organizations, building on the momentum created in recent years including through **Canada's 2018 G7 presidency**^{clxxxii} and role as host of the **2019 Clean Energy Ministerial (CEM) and Mission Innovation (MI)**.^{clxxxiii} Canada will ensure that its domestic energy advantage and its energy priorities are also advanced in other multilateral fora, including the **G7**,^{clxxxiv} **G20**,^{clxxxv} **International Energy Agency (IEA)**,^{clxxxvi} **International Renewable Energy Agency**,^{clxxxvii} and the **International Energy Forum**.^{clxxxviii} Notably, Canada will serve as Chair of the IEA's Committee on Energy Research and Technology, and provide ongoing

support to the **IEA’s Clean Energy Transitions Programme**.^{clxxxix} In addition, Canada will continue actively participating in strategic planning to set the next goals of **Mission Innovation (MI)**^{clxxx} beyond its inaugural five-year mandate, as well as participating in all eight of **MI’s Innovation Challenges**^{clxxxi} and leading two of these, on **sustainable biofuels**^{clxxxii} and **clean energy materials**.^{clxxxiii}

NRCan will also work with stakeholders from across the country to ensure Canada’s natural resources remain a source of jobs and prosperity for all Canadians. This includes working to implement recommendations of the **Resources of the Future**^{clxxxiv} and **Clean Technology Economic Strategy Tables**,^{clxxxv} which looked at opportunities to improve competitiveness and unlock future growth. This work builds on Generation Energy and is complementary to that undertaken as part of the **Joint Industry-Government Working Group on a Future Vision for Canada’s Upstream Oil and Gas Sector** and the **Atlantic Offshore Competitiveness Roundtable**^{clxxxvi} to examine petroleum industry competitiveness concerns. The Atlantic Roundtables will continue to provide senior leaders from industry and provincial and federal governments the opportunity to discuss and develop competitiveness solutions, such as advancing regulations to improve safety and environmental performance, supporting work regarding the impact assessment of major projects, and developing a baseline understanding of Canadian petroleum industry competitiveness.

Ensuring that Canadians are engaged in the future of the new and inclusive resource economy

As Canada’s natural resources sector rapidly evolves towards a low-carbon future, and embraces new technologies and develops higher value products, companies will require a skilled and diverse pool of future-ready workers. A workforce that is skilled in science, technology, engineering and math (STEM) is necessary to ensure that Canada maintains our competitive advantage, demonstrates global leadership in resource sustainability and attracts investments. In 2020-21, NRCan will continue to deliver the **Science and Technology Internship Program**,^{clxxxvii} as part of the **Youth Employment and Skills Strategy**,^{clxxxviii} offering internship opportunities in the natural resources sector to youth across Canada.

Canada is committed to providing opportunities for workers affected by rapidly transforming natural resource sectors. Canada has led by example with the **Task Force on Just Transition for Canadian Coal Power Workers and Communities**.^{clxxxix} Budget 2018 and 2019 announced support for workers and communities affected by the phase out of traditional coal-fired electricity. NRCan is committed to report on the results of activities in collaboration with ECCC, ESDC, ISED, and Rural Economic Development, as well as provinces and territories, workers, unions, municipalities and economic development agencies. In addition to NRCan’s

responsibility related to the Just Transition Task Force, the Department also contributes to the Government's efforts to support workers and communities through the low-carbon energy transition by looking at ways to foster future skills, create inclusive cultures, and promote new partnerships and governance models throughout the natural resources sector. To strengthen the competitiveness and overall health of Canada's forest sector, the Department will continue to defend Canadians, communities, workers and industry from unfair trade disputes.

Working with partners in other government organizations, provinces and territories, and with industry, the Department will promote knowledge of Canadian forests sustainability and of wood products environmental performance in order to facilitate market access and address regulatory issues that could limit trade. NRCan will continue to promote the use of Canadian wood in non-traditional low-carbon construction through the **Green Construction Through Wood Program**,^{cxv} and advance the implementation of the **Forest Bioeconomy Framework**,^{cxvi} through programs such as the **Indigenous Forestry Initiative (IFI)**.^{cxvii} The IFI will also play a role by encouraging and supporting Indigenous participation in the forest economy.

Canada is also working with international partners to ensure development of standards, policies, and regulations to facilitate broader use of forest products and building systems (e.g. construction, energy production, and product development). Federal departments are also engaging countries such as Finland, Sweden, Norway and Germany to advance bioeconomy opportunities in areas such as science and knowledge exchange, technology development, business to business relationships, and sustainable forest management.

In 2020-21, NRCan will continue to advance strategic resource projects and work with **CIRNAC**^{cxviii} and FIN to develop a new national benefits-sharing framework for major resource projects located on Indigenous territory.

NRCan is enhancing the competitiveness of Canada’s natural resource sectors

Many countries and regions, have confirmed that certain minerals and metals are critical due to their exposure to market risks, scarcity of supply, and inadequate investment in future production. Global demand for these minerals and metals is increasing in tandem with the rapid expansion of the electric vehicle market, adoption of clean energy technologies, and advances in defence technology.

Federal, provincial and territorial governments are working collaboratively to develop concrete actions under the **CMMP**^{cxv} to secure Canada’s competitive position as the leading mining nation. Pan-Canadian initiatives are currently under development with provinces and territories to operationalize the first Action Plan of the CMMP. These include a pan-Canadian geoscience strategy; workshops aimed at increasing Indigenous and local procurement; an improved reclamation and remediation initiative; programming to support an effective innovation ecosystem; a mineral literacy campaign; and, the establishment of a Canada Brand for mining. NRCan is also engaging and collaborating with National Indigenous Leaders and organizations, modern treaty holders, Indigenous economic development organizations, and community members, to ensure Indigenous perspectives are heard and respected during the development of the first CMMP Action Plan.

Canada’s minerals sector is an important global supplier of minerals and metals that are essential to our modern economies and emerging technologies, including critical minerals that enable a swift transition to a low-carbon economy. For example, lithium, nickel and minor metals such as cadmium, cobalt and indium are essential for renewable energy technologies, while aluminum is key to zero-energy buildings and solar applications. As Canada’s reserves for some of these metals have been declining for 30 years, deeper exploration is required to develop new supply. **Targeted Geoscience Initiative (TGI)**^{cxv} research has focused on understanding geological processes that lead to mineral deposition and modelling 3D geological structure at depth to identify potential ore deposits.

Geoscience generated by TGI was instrumental in developing the strategic directions of the CMMP. This long-term plan will enhance Canada’s competitiveness and develop a modern and

Canada and U.S. Joint Action Plan on Critical Minerals Collaboration

Canada has the potential to become a secure and responsible source of critical minerals and downstream value added products, including rare earth elements, key components in renewable energy technologies and many of the electronic devices that we use in our daily lives. By finalizing the Canada–U.S. Joint Action Plan on Critical Minerals Collaboration, Canada is improving its critical mineral security, including for uranium and rare earth elements, while bolstering the competitiveness of Canadian industry, positioning Canada in global markets and creating jobs for Canadians.

As a part of the **Joint Action Plan**, Canada also joined the U.S.-led, multi-country **Energy Resource Governance Initiative**, which aims to promote secure and resilient global supply chains for critical energy minerals, particularly in third countries with important mineral resource wealth. The initiative complements the Government of Canada’s longstanding efforts to increase transparency in the extractive sector and ensure developing countries have the capacity to manage natural resources in line with the UN Sustainable Development Goals.

innovative mining industry supported by world-class science and technology. By delivering public geoscience to support mineral exploration, it is promoting economic development and fostering Canada's role as a global leader in the mining industry. As the CMMP is implemented, leading-edge TGI research will facilitate next generation geoscience innovations and sustainable resource development.

Governments around the globe are investing billions to attract battery manufacturers and electrified vehicle assembly plants. Countries that position their competitive advantages to attract investment from leaders in global battery manufacturing will realize the economic benefits and remain influential players in global energy policy. Canada is well positioned to be a leader in advanced battery technologies with world-class research, advanced manufacturing talent, and the required minerals and metals. In 2020-21, NRCan will work with other federal government departments to develop a Canadian battery strategy to signal to the market that Canada is serious about attracting investment and growing our domestic industry.

NRCan is building on recent progress in the petroleum sector to promote further market diversification, strengthen competitiveness and incent investment. Even as the world's energy mix transitions to lower carbon forms of energy, fossil fuels (including petroleum) are expected to supply over three-quarters of the world's energy in 2030 and Canada has an opportunity to be a key global supplier. To further support this progress, NRCan has created a Strategic Petroleum Policy and Investment Office to serve as the strategic centre of expertise for the government's legislative, policy and regulatory responsibilities pertaining to the sustainable development of petroleum in Canada.

Building on the foundational Generation Energy work, NRCan will work to support the sector's transformation to be cost and carbon competitive and become the cleanest global petroleum sector (offshore and onshore) in a global energy system that will rely on multiple fuels and technologies. NRCan will work with its provincial and territorial counterparts, Indigenous peoples, industry and stakeholders to advance these efforts, taking concrete action to reduce emissions and promote areas of sustainable growth. NRCan is working with these partners to advance support for sectoral innovation, diversify products and enhance the value-chain, electrify the petroleum sector, and strengthen investment and get projects built.

As we modernize and digitize energy systems and explore new opportunities across the value chain, there is a need to increase the safety and security of critical infrastructure. Given that the complex, interconnected, rapidly evolving energy sector is among the most frequently targeted sectors for threats including cyber crime, NRCan is working to strengthen Canada's capacity to protect critical energy infrastructure. Activities in 2020-21 will include enhanced collaboration with international partners, with a focus on the U.S. aimed at protecting cross-border energy infrastructure; funding projects to strengthen energy sector capability to prevent, prepare,

respond to and recover from cyber threats; and advancing cooperation within and across governments, industry and academia.

In 2020-21, NRCan will work with other government departments, offshore boards, provinces and industry to deliver resource assessments for **Marine Conservation Targets**^{cxvii} to locate areas of greatest offshore mineral and energy potential. The Department will enable industry to become more innovative and competitive in their search for deep mineral deposits, particularly around mining-dependent communities through geoscience initiatives. The **GEM Program**^{cxviii} will bring geoscience knowledge of the North up to the standards needed for companies to make better exploration investment decisions and for northern communities to make appropriate land-use decisions.

NRCan will also continue to work with the Government of Newfoundland and Labrador and Nova Scotia, as well as the **Canada-Newfoundland and Labrador Offshore Petroleum Board**^{cxviii} to ensure Canada's offshore is world class and upholds the highest standards for safety and environmental protection. This includes continuing to work with the Government of Newfoundland and Labrador and the Canada-Newfoundland and Labrador Offshore Petroleum Board to advance efforts in the prevention of oil spills and enhancement of response plans and procedures in the Canada-Newfoundland and Labrador offshore.

The forest sector is at a crossroad: while the industry is facing a number of challenges, it is also at the centre of growing opportunities, emerging as a global leader in the bio and circular economy. These opportunities include bioenergy, bio-products such as plastics and mass timber construction, and biofuels. The forest sector is also part of Canada's nature-based solutions to climate change, by sequestering carbon in both forests and derived product, and its transition to a low-carbon economy. In 2020-21, NRCan will work with partners in other governmental organizations, provinces and territories, and Indigenous communities, to leverage our natural resource advantage and create a more diversified, competitive, and resilient forest sector for workers, communities, and industry.

United Nations' 2030 Agenda and Sustainable Development Goals (SDGs)

NRCan's planned activities under this Core Responsibility support Canada's efforts to address the UN 2030 Agenda and the achievement of several Sustainable Development Goals (SDG).

For example, in support to **SDG 15 – Life on Land**^{cxix} and **SDG 17 – Partnerships for the Goals**,^{cc} the **Indigenous Forestry Initiative (IFI)**,^{cci} supports Indigenous-led economic development in Canada's forest sector by increasing Indigenous participation in forestry-related opportunities, businesses careers and governance. In addition, the burgeoning bioeconomy represents enormous potential for Canada's forest products industry, allowing initiatives with

partners where both competitive economic growth and sustainability can meet, as outlined in the **Forest Bioeconomy Framework**.^{ccii}

Other partnerships in support of **SDG 17**^{cciii} include NRCan’s work on **Marine Conservation Targets**^{cciv} where resource assessments are developed to advise other government departments on protected areas along Canada’s offshore. This work also supports **SDG 14 – Life Below Water**,^{ccv} which aims to conserve and sustainably use oceans, seas and marine resources for sustainable development.

In addition to these examples of domestic partnerships, NRCan is also participating in a number of bilateral, multilateral and international engagements that also supports **SDG 17**,^{ccvi} such as **Mission Innovation (MI)**^{ccvii} that is working to accelerate global clean energy innovation with 24 other countries.

NRCan’s work on the **Energy Safety and Security, and Petroleum Resources program** supports both **SDG 7 – Affordable and Clean Energy**^{ccviii} and **SDG 9 – Industry, Innovation and Infrastructure**^{ccix} by providing advice to support decision-making that promotes the safe, secure and sustainable production and transportation of petroleum resources through collaboration with international partners on our critical energy infrastructures.

Additional information about how NRCan activities support United Nations’ 2030 Agenda and Sustainable Development Goals will be reflected under the NRCAN 2020-23 Departmental Sustainable Development Strategy. Altogether, these activities will support Canada’s transition to a low-carbon future and support competitiveness in Canada’s natural resources sectors, while advancing reconciliation with Indigenous peoples.

Departmental Risk

NRCan has identified a number of risks under this Core Responsibility, including the changing trade context and market access for the natural resource sectors, opportunities for workers affected by rapidly transforming natural resource sectors, as well as maintaining public confidence and engagement, including of Indigenous peoples, in natural resources development.

NRCan will continue to manage these risks through the development, implementation and monitoring of mitigation strategies, including:

- Contributing to the diversification of Canada’s market for natural resources, which includes strategies on addressing trade barriers and infrastructure capacity;

- Contributing to the Government of Canada’s efforts to support workers and communities to foster future skills, create inclusive cultures, provide tools and training to be full participants in a clean-growth economy; and
- Continuing work to restore public trust in regulatory processes and impact assessments of natural resources development.

Gender-Based Analysis Plus (GBA+)

Natural Resources Canada is using Gender-Based Analysis Plus (GBA+) to rigorously assess all Treasury Board Submissions, Memoranda to Cabinet and Budget proposals for potential impacts or implications on diverse populations of Canadians. This allows the department to respond to potential barriers while facilitating more inclusive and equitable opportunities and outcomes.

For example, under the **Core Responsibility – Globally Competitive Natural Resource Sectors**, in the coming year, NRCan will seek to enable inclusive energy sector workforce as Canada transitions to a low-carbon future, including the by supporting ESDC in its work with the Future Skills Council. NRCan provides data and trends on gender and underrepresented groups in the energy sector to inform the Council's recommendations on future policy decisions with regards to targeted skills training and career development.

Additionally, in the coming year, the **Mining Sector Performance Report** will ensure more inclusive outcomes as NRCan has identified gaps in data collection regarding diversity among participants in the mining sector. Moving forward, these gaps will be addressed through modifications in program design.

This GBA+ analysis serves to ensure that NRCan actively promotes diversity in the Department’s proposed policies, programs, initiatives and services. For further information on GBA+ at NRCan please refer to the *GBA+ Supplementary Information Table*.

Experimentation in NRCan Programs Supporting Competitive Natural Resource Sectors

In 2020-21, the Experimentation and Analytics Unit at NRCan will be actively engaging internally to identify opportunities for more formal experimentation within this core area of responsibility.

Planned results for Globally Competitive Natural Resource Sectors

Departmental result	Departmental result indicator	Target	Date to achieve target	2016–17 Actual result	2017–18 Actual result	2018–19 Actual result
Access to new and priority markets for Canada's natural resources is enhanced	Canada's share of U.S. and global imports of natural resources	Canada's market share in the U.S. = At least 24.4% of total U.S. imports (in value) Canada's market share in the world (non-U.S.) = At least 1.3% of the total world imports (in value)	December 2020	23.8% (U.S.) 1.4% (global imports)	25.2% (U.S.) 1.4% (global imports)	24.8% (U.S.) 1.4% (global imports)
	Increase in value of assets abroad owned by Canadian natural resource companies	At least \$220.4 billion	December 2020	\$225.7 billion	\$220.3 billion	Data not yet available ²⁰
	Number of NRCan international engagements that support the development or expansion of trade and investment in natural resources	At least 40	March 2021	Not Available ²	27	39

²⁰ Compilation of 2018-19 Industry data is not available before April 2020 and will be reported in subsequent reports.

Canadians are engaged in the future of the new and inclusive resource economy	Number of joint products developed in collaboration with provinces and territories and released to Canadians	At least 17	March 2021	11	10	18
	Percentage of NRCan's projects that support participation of Indigenous communities, organizations or governments in Canada's natural resource economy	To be determined in 2020-21 ²¹	March 2021	Not Available ³	Not Available ³	Not Available ³
Enhanced competitiveness of Canada's natural resource sectors	Percentage of resource development project decisions on target as per timelines	To be determined in 2020-21 ²²	March 2021	100%	100%	100%
	Number of initiatives enabled by NRCan to strengthen the security and resilience of Canada's critical energy infrastructure	At least 14	March 2021	Not Available ²³	Not Available ²³	10
	Number of times NRCan's economic and investment data are accessed	At least 300,000 quarterly average	March 2021	31,247	133,147 ²⁴	191,735 ²⁴

²¹ The target will be determined based on 2020-21 baseline data.

²² 2020-21 target is not available for this indicator as the Major Projects Management Projects Initiative funding is scheduled to sunset in March 2020.

²³ Historical information is not available for all previous years for this indicator newly added to Natural Resource Canada's Departmental Results Framework starting in 2020-21

²⁴ Since the 2018-19 Departmental Plan, NRCan has revised the methodology to more accurately count access to NRCan's economic and investment data rather than to landing pages for this data. The 2017-18 and 2018-19 results reflect the change in methodology.

Planned budgetary financial resources for Globally Competitive Natural Resource Sectors

2020–21 budgetary spending (as indicated in Main Estimates)	2020–21 planned spending	2021–22 planned spending	2022–23 planned spending
\$425,892,047	\$425,892,047	\$573,749,450	\$875,134,598

Planned human resources for Globally Competitive Natural Resource Sectors

2020–21 planned full-time equivalents	2021–22 planned full-time equivalents	2022–23 planned full-time equivalents
436	421	389

Financial, human resources and performance information for the Natural Resources Canada's program inventory is available in the [GC InfoBase](#).^{ccx}

Internal Services: planned results

Description

Internal Services are those groups of related activities and resources that the federal government considers to be services in support of Programs and/or required to meet corporate obligations of an organization. Internal Services refers to the activities and resources of the 10 distinct services that support Program delivery in the organization, regardless of the Internal Services delivery model in a department. These services are:

- ▶ Management and Oversight Services
- ▶ Communications Services
- ▶ Legal Services
- ▶ Human Resources Management Services
- ▶ Financial Management Services
- ▶ Information Management Services
- ▶ Information Technology Services
- ▶ Real Property Management Services
- ▶ Materiel Management Services
- ▶ Acquisition Management Services

Planning highlights

In the coming year, NRCan’s Internal Services will continue to support the Department in advancing the Minister’s Mandate Letter commitments and Government of Canada priorities. By providing corporate support, NRCan’s Internal Services will ensure that NRCan programs are equipped with the tools required to deliver results to Canadians.

Supporting Science in an Open and Accountable Government

Ensuring NRCan’s science is underpinned by a culture of integrity and excellence is essential to maintaining the rigour, relevance and reputation of NRCan and its expertise, while building trust among Canadians. In 2020-21, work will continue on implementing the **Scientific Integrity Policy (SIP)**,^{ccxi} adopted in 2019, to ensure that the principles of the SIP are embedded in the design, conduct, management and use of the Department’s science.

Through NRCan’s digital magazine, **Simply Science**^{ccxii} the Department provides its scientists and experts across Canada with a platform to share their work with a broad audience in a dynamic way, using a variety of formats including articles, videos and podcasts. Through a **Federal Geospatial Platform initiative, Open Maps**^{ccxiii} provides all Canadians with access

and use of the Government of Canada’s geospatial data, services and applications. These can be used to support research, application development, data visualization and collaboration with other Canadians.

In support of the Government of Canada’s commitments under the **4th Biennial Open Government Partnership Action Plan (2018-20)**,^{ccxiv} NRCan will develop an **Open Science Roadmap** to provide a plan for greater openness in its science and research activities. Canadians rely on NRCan science to inform decision-making in government, industry and public fora. To better understand how Canadians use the science and data produced by NRCan, the Department will continue to develop indicators to measure the benefits of our science and to measure progress in making our science and data more accessible.

In order to support informed decision-making in government, industry and public fora, the Department will also increase engagement with Canadians to support enhanced dialogue and interaction between knowledge generators and knowledge users.

NRCan’s first Chief Science Advisor (CSA), named in 2019, will work towards improving the existing science advisory function within the Department, ensuring that our decisions and actions are grounded in transparent and robust science. NRCan’s CSA will also work with the interdepartmental network of Departmental Science Advisors, under Canada’s Chief Science Advisor’s leadership, to address cross-government science priorities.

Emergency Management and Cybersecurity

NRCan supports the Government of Canada’s national security and emergency management agenda by providing scientific advice and leadership. In 2020-21, NRCan will continue to provide strategic advice and operational support during emergencies such as floods and wildfires. In addition, NRCan will continue to focus on mitigating cyber security risks to protect its assets. In support of this, the Department will continue to strengthen the oversight and governance on IT activities across the organization.

Strengthening Federal Science and Renewing NRCan’s Laboratory Infrastructure

Laboratories Canada is a 25-year whole-of-government initiative led by Public Services and Procurement Canada (PSPC) to strengthen federal science in Canada. Budget 2018 committed \$2.8 billion for the first phase (2018-2023) of this initiative to renew federal laboratory infrastructure across Canada. Through Laboratories Canada, NRCan will consolidate significant portions of its science facilities under new, world-class laboratory facilities that will meet the current and future needs of its scientists and promote collaboration with internal and external partners.

Under this first phase, NRCan co-leads the establishment of TerraCanada in partnership with other government organizations and working with PSPC. The Department is contributing to transforming the delivery of science in the federal science ecosystem by promoting an integrated science vision and plan with its partners and reducing barriers to scientific collaboration. To this end, TerraCanada will establish a network of facilities with a campus in the National Capital Region and at regional locations, leveraging regional expertise. The innovative R&D conducted under TerraCanada contributes to developing the economic potential of Canada’s lands and resources in a sustainable manner and supporting the transition to a low carbon economy and mitigating the impact of natural and human-made hazards.

Workforce and Workplace

Our dynamic workforce drives NRCan’s delivery of results to Canadians. In 2020-21, NRCan will continue to foster a healthy and inclusive workplace for our employees, particularly in light of new Workforce Availability data for Employment Equity (EE) groups, as well as the coming into force of the *Accessibility Act* and Public Service-wide Accessibility Strategy. In response, NRCan will develop recruitment and retention strategies for persons with disabilities with a focus on ensuring employees have an accessible workplace where their accommodation needs are met. These strategies will be included in a planned EE and Diversity Action Plan for 2020-2023.

In addition, the Department will advance corporate change in support of reconciliation by providing training and awareness for employees and investing in targeted activities to help us become an employer of choice for Indigenous peoples. These activities will include developing a recruitment strategy for Indigenous peoples, particularly in the Executive (EX) group, as well as engaging in a dialogue with Indigenous employees to find out where they may face barriers in career development. Reconciliation and Cultural Awareness trainings will be included in the Learning and Development Pathways of NRCan Development Programs.

Policy Analyst Recruitment and Development Program (PARDP)

PARDP is an accelerated development program that recruits high calibre Master’s or PhD-level graduates for challenging policy roles in Natural Resources Canada. Through two rotational assignments, training, and mentorship support, they develop into policy leaders who contribute to meeting departmental priorities and to innovation in the natural resource sectors. Along with other recruitment and development channels, PARDP helps to ensure that NRCan’s workforce needs are met.



PARDP participants visit the Gatineau QC Satellite Station (GSS) to learn more about the Canada Centre for Mapping and Earth Observation

Through 2020-21, the Department will also continue to offer distinctions-based learning opportunities to support an increased understanding of various Indigenous cultures, practices, philosophies guided by Elders, noted Indigenous opinion leaders and academics. These teachings will support the goal of integrating Indigenous knowledge into our work and strengthen our western science. NRCan's Circle of Nations Learning Center opened in September 2019 in the former Lead Astronomer's House on the Experimental Farm in Ottawa. Since then, the center has hosted numerous events including Indigenous cultural teachings, workshops and intergovernmental fora.

The new 2020-2023 Mental Health and Workplace Wellness Strategy will be implemented and NRCan will continue to promote the resources and tools available to all employees to support a psychologically healthy and safe workplace.

Alternately, recent Public Service Employee Survey (PSES) results were very positive, overall. Of note, CanmetENERGY-Ottawa was recently awarded, Excellence Canada Certification for Excellence, Innovation and Wellness and Mental Health at Work. For 2020-21 NRCan will maintain its efforts to improve further on some areas such as leadership, diversity and inclusion, respectful and ethical workplace, and compensation support. To achieve this our PSES departmental working group, composed of representatives from all sectors, will ensure that their senior management teams have the information and support required to drive continuous improvement. Concrete results will be achieved through initiatives such as the upcoming 2020-23 Official Languages Action Plan, the 2020-23 Employment Equity, Diversity and Inclusion Action Plan, as well as through ongoing Change Leadership and Flexible Work Initiatives.

Experimentation in Recruitment

NRCan is developing experimental evaluations of various approaches to recruitment, screening, performance management and retention of staff to ensure the Department continues to recruit and retain first-class employees to advance its priorities.

Using evidence from experimental results, NRCan will advance its Talent Acquisition Strategy by transforming the process of attracting and recruiting talent, and focus on branding and marketing to develop a strong and inclusive workplace culture by investing in talent sourcing, data analysis, and new technologies to increase results and efficiency in the hiring process.

The expected results are a highly qualified, competent, and diverse workforce with the skills and competencies needed to deliver on NRCan's mandate.

Planned budgetary financial resources for Internal Services

2020–21 budgetary spending (as indicated in Main Estimates)	2020–21 planned spending	2021–22 planned spending	2022–23 planned spending
\$128,888,904	\$128,888,904	\$130,131,763	\$129,065,189

Planned human resources for Internal Services

2020–21 planned full-time equivalents	2021–22 planned full-time equivalents	2022–23 planned full-time equivalents
1,036	1,033	1,032

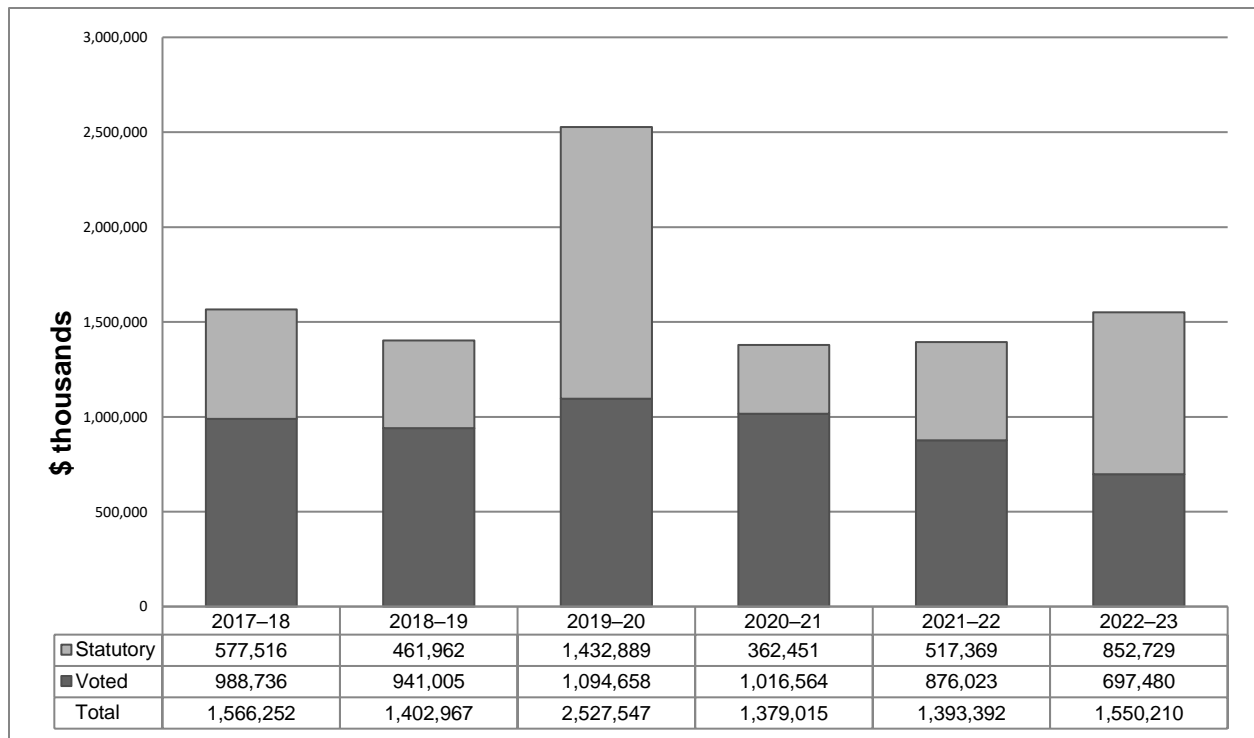
Spending and human resources

This section provides an overview of the Department’s planned spending and human resources for the next three consecutive fiscal years, and compares planned spending for the upcoming year with the current and previous years’ actual spending.

Planned spending

Departmental spending 2017–18 to 2022–23

The following graph presents planned (voted and statutory) spending over time.



Budgetary planning summary for core responsibilities and Internal Services (dollars)

The following table shows actual, forecast and planned spending for each of Natural Resources Canada's core responsibilities and to Internal Services for the years relevant to the current planning year.

Core responsibilities and Internal Services	2017–18 expenditures	2018–19 expenditures	2019–20 forecast spending	2020–21 budgetary spending (as indicated in Main Estimates)	2020–21 planned spending	2021–22 planned spending	2022–23 planned spending
Natural Resource Science and Risk Mitigation	\$189,693,261	\$208,683,836	\$213,983,056	\$214,015,248	\$214,015,248	\$211,981,702	\$178,259,983
Innovative and Sustainable Natural Resources Development	\$548,425,192	\$483,259,791	\$1,544,219,414	\$610,218,394	\$610,218,394	\$477,529,144	\$367,749,761
Globally Competitive Natural Resource Sectors	\$685,107,560	\$561,781,790	\$640,386,245	\$425,892,047	\$425,892,047	\$573,749,450	\$875,134,598
Subtotal	\$1,423,226,013	\$1,253,725,417	\$2,398,588,715	\$1,250,125,689	\$1,250,125,689	\$1,263,260,296	\$1,421,144,342
Internal Services	\$143,026,202	\$149,241,560	\$128,958,221	\$128,888,904	\$128,888,904	\$130,131,763	\$129,065,189
Total	\$1,566,252,215	\$1,402,966,977	\$2,527,546,936	\$1,379,014,593	\$1,379,014,593	\$1,393,392,059	\$1,550,209,531

For 2017-18 and 2018-19, the figures represent the actual expenditures as reported in the Public Accounts of Canada, while those for 2019-20 represent the forecasted expenditures to year-end. For 2020-21 to 2022-23, the figures represent total planned spending, based on funding approved to support NRCan program activities.

From 2017-18 to 2018-19, NRCan statutory expenditures decreased mainly as a result of a reassessment of royalties paid from prior years related to the Statutory Atlantic Offshore accords resulting in a one-time payment to the province of Nova Scotia in 2017-18. NRCan Voted expenditures decreased due to an endowment to the Federation of Canadian Municipalities for the Green Municipal Fund made in 2017-18 and the sunsetting of the Oil & Gas Clean Technology program. The reductions were offset by increased spending mainly in the Green Infrastructure programs.

The fluctuation in funding from 2018-19 to 2020-21 is mainly as a result of a statutory endowment in 2019-20 to the Federation of Canadian Municipalities for the Green Municipal Fund. This item along with a decrease in Statutory Atlantic Offshore payments, as well as the sunsetting of the Forest Innovation, the Expanding Market Opportunities, and the Investments in Forest Industry Transformation programs for which renewals are being sought, largely contributed to the reductions. These decreases are offset by increased planned spending mainly in the Green Infrastructure programs.

Planned spending in Voted authorities from 2020-21 to 2022-23 is declining, mainly as a result of reduced funding profiles for major initiatives and sunsetting programs. Sunsetting programs could be renewed pending future budgetary decisions. Outcomes of such decisions will be reflected in the Department's future budget exercises and Estimates documents. The following major initiatives will be sunsetting over the next two years:

Sunsetting on March 31, 2021 and potentially up for renewal:

- **ecoENERGY for Renewable Power program**;^{ccxv} and,
- **Impact Canada Initiative**.^{ccxvi}

Sunsetting on March 31, 2022 and potentially up for renewal:

- **Green Infrastructure Smart Grid and Electric Vehicles and Alternative Fuel Infrastructure Deployment Initiative** programs;^{ccxvii}
- Advancing Clean Technology – Clean Growth Program;
- **Indigenous Advisory and Monitoring Committees**^{ccxviii} for Energy Infrastructure projects;
- **Oceans Protection Plan**;^{ccxix} and,
- **Adapting to the Impacts of Climate Change Building Regional Adaptation Capacity and Expertise Program**.^{ccxx}

Planned spending in Statutory authorities is increasing from 2020-21 to 2022-23, mainly as a result of the Atlantic Offshore Accounts. Statutory payment obligations under these accords are largely driven by petroleum prices, production levels and anticipated corporate income taxes related to offshore operations. The planned spending is based on the Department's economic modeling forecasts prepared in the fall of 2019.

Planned human resources

The following table shows actual, forecast and planned full-time equivalents (FTEs) for each core responsibility in Natural Resources Canada's Departmental Results Framework and to Internal Services for the years relevant to the current planning year.

Human resources planning summary for core responsibilities and Internal Services

Core responsibilities and Internal Services	2017–18 actual full-time equivalents	2018–19 actual full-time equivalents	2019–20 forecast full-time equivalents	2020–21 planned full-time equivalents	2021–22 planned full-time equivalents	2022–23 planned full-time equivalents
Natural Resource Science and Risk Mitigation	1,138	1,223	1,255	1,226	1,215	1,207
Innovative and Sustainable Natural Resources Development	1,524	1,581	1,667	1,581	1,466	1,447
Globally Competitive Natural Resource Sectors	390	407	491	436	421	389
Subtotal	3,052	3,211	3,413	3,243	3,102	3,043
Internal Services	928	960	1,020	1,036	1,033	1,032
Total	3,980	4,171	4,433	4,279	4,135	4,075

For 2017-18 and 2018-19, the figures represent the FTEs as reported in the Departmental Results Report while 2019-20 represents the forecasted FTEs to year-end. For 2020-21 to 2022-23, the figures represent total Planned FTEs to support NRCan program activities, approved by Treasury Board.

NRCan’s total FTE count remains relatively steady from 2017-18 to 2022-23.

The decrease between 2019-20 Forecasted FTEs and 2022-23 Planned FTEs is mainly attributed to the sunsetting of major initiatives, which were explained in the Budgetary Planning Summary Section. As new initiatives are undertaken, plans for future FTE requirements will be adjusted accordingly.

Estimates by vote

Information on the Natural Resources Canada’s organizational appropriations is available in the [2020–21 Main Estimates](#).^{ccxxi}

Consolidated future-oriented condensed statement of operations

The consolidated future-oriented condensed statement of operations provides an overview of NRCan’s operations for 2019-20 to 2020-21.

The amounts for forecast and planned results in this statement of operations were prepared on an accrual basis. The amounts for forecast and planned spending presented in other sections of the Departmental Plan were prepared on an expenditure basis. Amounts may therefore differ.

A more detailed consolidated future-oriented statement of operations and associated notes, including a reconciliation of the net cost of operations to the requested authorities, are available on the [NRCan’s website](#).^{ccxxii}

Consolidated future-oriented condensed statement of operations for the year ending March 31, 2021 (dollars)

Financial Information	2019-20 forecast results	2020-21 planned results	Difference (2020-21 planned results minus 2019-20 forecast results)
Total expenses	1,649,803,902	1,419,444,847	(230,359,055)
Total net revenues	30,150,460	34,003,745	3,853,285
Net cost of operations before government funding and transfers	1,619,653,442	1,385,441,102	(234,212,340)

The decrease of \$230 million in total expenses between years is mainly explained by:

- **A decrease of \$211.1 million in Globally Competitive Natural Resource Sectors** mainly due to:
 - a decrease of \$111.4 million in the Statutory Atlantic Offshore Accounts and the related transfers to provinces due to anticipated fewer royalties as a result of lower production and oil prices in 2020-21; and,
 - a decrease of \$98.1 million due to the sunsetting of the Forest Innovation, the Expanding Market Opportunities, the Investments in Forest Industry Transformation, and the recently completed consultations concerning the Trans Mountain Expansion Pipeline Project.
- **A decrease of \$11.2 million in Innovative and Sustainable Natural Resources Development** mainly related to:
 - a decrease of \$36.3 million in the ecoENERGY for Renewable Power as the program nears completion and a decrease of \$7.6 million in statutory funding for the Climate Action Incentive Fund.

- These decreases are offset by an increase of \$30.4 million due to funding reprofiles for Impact Canada, Clean Growth and Clean Energy for Rural and Remote Communities.

The increase of \$3.9 million in total net revenues is mainly due to an estimated increase in the Environmental Studies Research Fund in 2020-21.

The charts presenting the distribution of Natural Resources Canada's total forecast expenses for 2019-20 and planned expenses for 2020-21 by Core Responsibility on an accrual basis are available on the [NRCan's website](#).^{ccxxiii}

Corporate information

Organizational profile

Appropriate ministers: The Honourable Seamus O'Regan, P.C., M.P.

Institutional head: Christyne Tremblay

Ministerial portfolio:

- [Atomic Energy of Canada Limited \(AECL\)](#),^{ccxxiv}
- [Canada Energy Regulator \(CER\)](#);^{ccxxv}
- [Canadian Nuclear Safety Commission \(CNSC\)](#);^{ccxxvi}
- [Canada-Newfoundland and Labrador Offshore Petroleum Board \(CNLOPB\)](#);^{ccxxvii}
- [Canada-Nova Scotia Offshore Petroleum Board \(CNSOPB\)](#);^{ccxxviii}
- [Northern Pipeline Agency \(NPA\)](#);^{ccxxix} and,
- Energy Supplies Allocation Board (ESAB) (inactive).

Enabling instruments:

- [Department of Natural Resources Act, S.C. 1994, c. 41](#);^{ccxxx}
- [Forestry Act, R.S.C., 1985, c. F-30](#);^{ccxxxii}
- [Resources and Technical Surveys Act, R.S.C., 1985, c. R-7](#);^{ccxxxiii}
- [Energy Efficiency Act, S.C. 1992, c. 36](#);^{ccxxxiiii}
- [Extractive Sector Transparency Measures Act, S.C. 2014, c. 39, s. 376](#);^{ccxxxv}
- [Explosives Act \(R.S.C., 1985, c. E-17\)](#);^{ccxxxvi}

Year of incorporation / commencement: 1994

Raison d'être, mandate and role: who we are and what we do

“Raison d'être, mandate and role: who we are and what we do” is available on [NRCan's website](#).^{ccxxxvii}

For more information on the Department's organizational mandate letter commitments, see NRCan's [Minister's mandate letter](#).^{ccxxxviii}

Operating context

A number of trends affect Natural Resources Canada’s work to support the sector’s continued prosperity. They include: shifting global demand and increased competition. On the climate front, the Department must also work with companies and communities to deal with the accelerating severity and frequency of wildfires and pest infestation.

Let’s start with global markets. As companies fight for their share, they are challenged by price volatility and shifting supply and demand patterns. They must also adapt to technological disruptions such as automation. Underlying all of this are new policy approaches and regulatory changes in response to climate change and carbon pricing.

In response, NRCan continues to work with international partners to promote investment in Canada’s natural resource sectors. We collaborate with Canadian industry to diversify products and services. And we encourage research that leads to the development and testing of novel approaches. We can, for instance, leverage our clean technology expertise to ensure Canada remains competitive. In addition, the Department works to confirm the right structures are in place to support our competitiveness. This involves work in areas such as environmental protection, regulatory regimes, resource management systems, and accessible public geoscience and forest science.

Secondly, heightened global competition leads to a greater focus among foreign governments and consumers on environmental stewardship practices and sustainability. With a focus on the low-carbon future in 2020-21, NRCan will continue to maintain Canada’s reputation for sustainable, clean, and competitive natural resource sectors. For example, through **Green Mining Innovation**,^{ccxxxviii} NRCan is working with a diverse group of stakeholders to study the entire mining life cycle. Our goal: to create green technologies and improve the mining sector’s environmental practices.

Thirdly, the emergence of new large markets in countries such as such as China and India gives Canada the chance to boost its exports and drive additional economic growth and job creation. We must also focus on the U.S., which continues to be a strong market despite ongoing uncertainty due to the softwood lumber dispute. In energy, Canada will remain a leader, as global demand for energy resources climbs.²⁵ The Department will also support the development of critical mineral value chains in Canada. This will connect our mineral resource wealth to advanced manufacturing, including for battery technologies.

Lastly, the effects of climate change are altering the sustainability and competitiveness of our natural resource sectors. Through its risk management and adaptation programs, NRCan

²⁵ The IEA projects that, under current and anticipated policies scenarios, world energy demand will grow 30-40% by 2040.

continues to help manage climate-related threats and emergencies and build a more resilient natural resource sectors. The Department is also pursuing natural solutions to climate change. That plan includes planting two billion trees over the next decade. Finally, NRCan supports other departments in the deployment of their programs and evaluation of projects. Those programs include the **Low-carbon Economy Fund**^{ccxxxix} (ECCC), the **Strategic Innovation Fund**^{ccxli} (ISED), and the **Strategic Partnerships Initiative**^{ccxli} (ISC).

Reporting framework

Natural Resources Canada’s approved Departmental Results Framework and Program Inventory for 2020–21 are as follows.

Natural Resources Canada’s Departmental Results Framework 2020-21

NRCan CORE RESPONSIBILITIES			
<p>Natural Resource Science and Risk Mitigation</p>  <p>Lead foundational science and share expertise for managing Canada’s natural resources, reducing the impacts of climate change and mitigating risks from natural disasters and explosives.</p>	<p>Innovative and Sustainable Natural Resources Development</p>  <p>Lead the transformation to a low-carbon economy by improving the environmental performance of Canada’s natural resource sectors through innovation and sustainable development and use.</p>	<p>Globally Competitive Natural Resource Sectors</p>  <p>Advance and promote market access, inclusiveness and competitiveness for Canada’s natural resource sectors, in support of jobs and economic growth.*</p>	<p>Internal Services</p> 
DEPARTMENTAL RESULTS AND INDICATORS <small>What is the department trying to achieve?</small>			
<p>Canadians have access to cutting-edge research to inform decisions on the management of natural resources</p> <ul style="list-style-type: none"> Number of times scientific products related to natural resources are accessed by Canadians Percentage of environmental impact assessments demonstrating use of scientific and technical advice provided by NRCan Number of times stakeholders acknowledge using NRCan’s scientific and technical products in making their decisions Number of training and development initiatives that enable NRCan to incorporate Indigenous knowledge in conjunction with NRCan science Percentage of annual updates to make NRCan foundation geospatial data current <p>Communities and officials have the tools to safeguard Canadians from natural hazards and explosives</p> <ul style="list-style-type: none"> Percentage of hazardous natural events within Canada for which a notification was issued in a timely manner Percentage of emergency geomatics services provided to Canadians in a timely manner to assist during floods Percentage uptime of the Canadian Wildland Fire Information System during the wildfire season Percentage of inspections of explosives rated safe <p>Communities and industries are adapting to climate change</p> <ul style="list-style-type: none"> Number of times NRCan products and expertise on adaptation are accessed by Canadians Percentage of Canadian communities and industries that have taken steps to adapt to climate change 	<p>Natural resource sectors are innovative</p> <ul style="list-style-type: none"> Percentage of NRCan-funded innovation projects that result in new intellectual property, standards or regulations Percentage of innovative forest products and decision tools informed by NRCan research that contribute to the environmental sustainability of Canada’s forests Percentage of NRCan-funded clean energy innovation projects advancing along the innovation scale Percentage of innovative mining technologies developed by NRCan that move towards being ready for commercial use <p>Clean technologies and energy efficiencies enhance economic performance</p> <ul style="list-style-type: none"> Percentage of NRCan-funded clean technology demonstration projects achieving their economic goals Ratio of partner investment to government spending in NRCan-funded energy innovation projects Total annual energy savings resulting from adoption of energy efficiency codes, standards and practices <p>Canada’s natural resources are sustainable</p> <ul style="list-style-type: none"> Percentage of Canadian electricity generated from non-GHG emitting sources Number of renewable energy projects in remote communities and off-grid industrial operations Amount of wood harvested compared to the sustainable supply Number of low-carbon recharging and refueling stations under development or completed Reduction in greenhouse gas emissions resulting from NRCan-funded clean technology demonstrations Percentage of NRCan’s projects on innovation and sustainable development that engage Indigenous communities, organizations or governments 	<p>Access to new and priority markets for Canada’s natural resources is enhanced</p> <ul style="list-style-type: none"> Canada’s share of U.S. and global imports of natural resources Increase in value of assets abroad owned by Canadian natural resource companies Number of NRCan international engagements that support the development or expansion of trade and investment in natural resources <p>Canadians are engaged in the future of the new and inclusive resource economy</p> <ul style="list-style-type: none"> Number of joint products developed in collaboration with provinces and territories and released to Canadians Percentage of NRCan’s projects that support participation of Indigenous communities, organizations or governments in Canada’s natural resource economy <p>Enhanced competitiveness of Canada’s natural resource sectors</p> <ul style="list-style-type: none"> Percentage of resource development project decisions on target as per timelines Number of initiatives enabled by NRCan to strengthen the cyber security and resilience of Canada’s critical energy infrastructure Number of times NRCan’s economic and investment data are accessed 	
PROGRAM INVENTORY <small>Covers 100 percent of the department’s activities and resources</small>			
<p>Canadian Geodetic Survey: Spatially Enabling Canada Geological Knowledge for Canada’s Onshore and Offshore Land Core Geospatial Data Canada-US International Boundary Treaty Canada Lands Survey System Geoscience for Sustainable Development of Natural Resources Pest Risk Management Forest Climate Change Climate Change Adaptation Explosives Safety and Security Geoscience to Keep Canada Safe Wildfire Risk Management Polar Continental Shelf program</p>	<p>Clean Energy Technology Policy, Research and Engagement Clean Growth in Natural Resource Sectors Energy Innovation Program Green Mining Innovation Fibre Solutions Sustainable Forest Management Cumulative Effects Lower Carbon Transportation Electricity Resources Energy Efficiency Energy and Climate Change Policy Innovative Geospatial Solutions</p>	<p>Forest Sector Competitiveness Provision of Federal Leadership in the Minerals and Metals Sector Energy Safety and Security, and Petroleum Resources International Energy Engagement Statutory Offshore Payments Natural Resources Canada’s Indigenous Partnerships Office – West Major Projects Management Office Initiative Science and Technology Internship Program</p> <p>* Also includes statutory payments for offshore petroleum.</p>	<p>Management & Oversight Communications Legal Services Human Resources Financial Management Information Management Information Technology Real Property (Domestic) Material Management Acquisition Management</p>

Supporting information on the program inventory

Supporting information on planned expenditures, human resources, and results related to the Natural Resources Canada's program inventory is available in the [GC InfoBase](#).^{ccxlii}

Supplementary information tables

The following supplementary information tables are available on the Natural Resources Canada's website:

- ▶ [Details on transfer payment programs](#)
- ▶ [Gender-based analysis plus](#)
- ▶ [Up-front multi-year funding](#)

Federal tax expenditures

Natural Resources Canada's Departmental Plan does not include information on tax expenditures that relate to its planned results for 2020–21.

Tax expenditures are the responsibility of the Minister of Finance, and the Department of Finance Canada publishes cost estimates and projections for government-wide tax expenditures each year in the [Report on Federal Tax Expenditures](#).^{ccxlili} This report provides detailed information on tax expenditures, including objectives, historical background and references to related federal spending programs, as well as evaluations, research papers and gender-based analysis. The tax measures presented in this report are solely the responsibility of the Minister of Finance.

Organizational contact information

Natural Resources Canada
580 Booth Street
Ottawa, Ontario
K1A 0E4
Canada

NRCan.media_relations-media_relations.RNCan@canada.ca

<http://www.nrcan.gc.ca/>

Appendix: definitions

appropriation (crédit)

Any authority of Parliament to pay money out of the Consolidated Revenue Fund.

budgetary expenditures (dépenses budgétaires)

Operating and capital expenditures; transfer payments to other levels of government, organizations or individuals; and payments to Crown corporations.

core responsibility (responsabilité essentielle)

An enduring function or role performed by a department. The intentions of the department with respect to a core responsibility are reflected in one or more related departmental results that the department seeks to contribute to or influence.

Departmental Plan (plan ministériel)

A report on the plans and expected performance of a department over a 3-year period. Departmental Plans are tabled in Parliament each spring.

departmental priority (priorité ministérielle)

A plan or project that a department has chosen to focus and report on during the planning period. Departmental priorities represent the things that are most important or what must be done first to support the achievement of the desired departmental results.

departmental result (résultat ministériel)

A consequence or outcome that a department seeks to achieve. A departmental result is often outside departments' immediate control, but it should be influenced by program-level outcomes.

departmental result indicator (indicateur de résultat ministériel)

A factor or variable that provides a valid and reliable means to measure or describe progress on a departmental result.

departmental results framework (cadre ministériel des résultats)

A framework that consists of the department's core responsibilities, departmental results and departmental result indicators.

Departmental Results Report (rapport sur les résultats ministériels)

A report on a department's actual accomplishments against the plans, priorities and expected results set out in the corresponding Departmental Plan.

experimentation (expérimentation)

The conducting of activities that seek to first explore, then test and compare, the effects and impacts of policies and interventions in order to inform evidence-based decision-making, and improve outcomes for Canadians, by learning what works and what doesn't. Experimentation is related to, but distinct from innovation (the trying of new things), because it involves a rigorous comparison of results. For example, using a new website to communicate with Canadians can be an innovation; systematically testing the new website against existing outreach tools or an old website to see which one leads to more engagement, is experimentation.

full-time equivalent (équivalent temps plein)

A measure of the extent to which an employee represents a full person-year charge against a departmental budget. Full-time equivalents are calculated as a ratio of assigned hours of work to scheduled hours of work. Scheduled hours of work are set out in collective agreements.

gender-based analysis plus (GBA+) (analyse comparative entre les sexes plus [ACS+])

An analytical process used to assess how diverse groups of women, men and gender-diverse people experience policies, programs and services based on multiple factors including race, ethnicity, religion, age, and mental or physical disability.

government-wide priorities (priorités pangouvernementales)

For the purpose of the 2020–21 Departmental Plan, government-wide priorities refers to those high-level themes outlining the government's agenda in the 2015 Speech from the Throne, namely: Growth for the Middle Class; Open and Transparent Government; A Clean Environment and a Strong Economy; Diversity is Canada's Strength; and Security and Opportunity.

horizontal initiative (initiative horizontale)

An initiative in which two or more federal organizations are given funding to pursue a shared outcome, often linked to a government priority.

non-budgetary expenditures (dépenses non budgétaires)

Net outlays and receipts related to loans, investments and advances, which change the composition of the financial assets of the Government of Canada.

performance (rendement)

What an organization did with its resources to achieve its results, how well those results compare to what the organization intended to achieve, and how well lessons learned have been identified.

performance indicator (indicateur de rendement)

A qualitative or quantitative means of measuring an output or outcome, with the intention of gauging the performance of an organization, program, policy or initiative respecting expected results.

performance reporting (production de rapports sur le rendement)

The process of communicating evidence-based performance information. Performance reporting supports decision-making, accountability and transparency.

plan (plan)

The articulation of strategic choices, which provides information on how an organization intends to achieve its priorities and associated results. Generally a plan will explain the logic behind the strategies chosen and tend to focus on actions that lead up to the expected result.

planned spending (dépenses prévues)

For Departmental Plans and Departmental Results Reports, planned spending refers to those amounts presented in the Main Estimates.

A department is expected to be aware of the authorities that it has sought and received. The determination of planned spending is a departmental responsibility, and departments must be able to defend the expenditure and accrual numbers presented in their Departmental Plans and Departmental Results Reports.

program (programme)

Individual or groups of services, activities or combinations thereof that are managed together within the department and focus on a specific set of outputs, outcomes or service levels.

program inventory (répertoire des programmes)

Identifies all of the department's programs and describes how resources are organized to contribute to the department's core responsibilities and results.

result (résultat)

An external consequence attributed, in part, to an organization, policy, program or initiative. Results are not within the control of a single organization, policy, program or initiative; instead they are within the area of the organization's influence.

statutory expenditures (dépenses législatives)

Expenditures that Parliament has approved through legislation other than appropriation acts. The legislation sets out the purpose of the expenditures and the terms and conditions under which they may be made.

strategic outcome (résultat stratégique)

A long-term and enduring benefit to Canadians that is linked to the organization's mandate, vision and core functions.

target (cible)

A measurable performance or success level that an organization, program or initiative plans to achieve within a specified time period. Targets can be either quantitative or qualitative.

voted expenditures (dépenses votées)

Expenditures that Parliament approves annually through an Appropriation Act. The vote wording becomes the governing conditions under which these expenditures may be made.

Endnotes

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