Natural Resources Canada

2018-19

Departmental Plan

The Honourable Jim Carr, P.C., M.P. Minister of Natural Resources

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Minister's message

Our government has a clear vision for Canada: to make it a global leader in this clean-growth century. We have also developed a clear path for getting there.

This report reflects the important role Natural Resources Canada is playing in these efforts: by accelerating the transition to a low-carbon economy; promoting clean technology, science and innovation; enhancing the safety and security of Canadians; improving access to global markets; and renewing our relationship with Indigenous peoples.



Innovation is central to everything we do. It creates new tools to help Canadians adapt to climate change and drives the clean technologies that make our energy, forest and mining industries more productive and environmentally sustainable.

Innovation also makes Canadian businesses more competitive by developing new products, expanding our exports and opening new markets.

As we prepare for the future, we must also ensure that Canadians can prosper in the present — including by providing energy they can count on when they flick on a light or fill up their cars. That means continuing to support our oil and gas industries even as we develop alternatives — including solar, biomass, wind and tidal.

We are also helping Canadians with the practical decisions they make every day, whether they are consumers purchasing an energy-efficient appliance or entrepreneurs pursuing clean-growth opportunities.

Our department is investing in green infrastructure, such as charging stations for electric vehicles, so Canadians can make confident choices about the kind of vehicles they buy. And we are establishing new building codes to make our homes and businesses, schools and hospitals more energy-efficient.

We are also strengthening our ties with our regional and international partners to turn our domestic successes into global opportunities.

All of these efforts are helping us honour the overarching goal made in my Mandate Letter to "ensure that our resource sector remains a source of jobs, prosperity and opportunity ... in a world that increasingly values sustainable practices and low-carbon processes."

Budget 2018 confirms NRCan's central role in the Government's efforts to make Canada a leader in the clean-growth future. It builds on previous budgets to advance the importance of natural resources in the economy of tomorrow.

As the world continues the transition to a low-carbon future, Natural Resources Canada will continue to be at the forefront — driving innovation, supporting gender equality, enhancing environmental performance and promoting Indigenous partnerships.

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Plans at a glance

Canada is rich in natural resources and has benefited through its history from trade with other nations. Canada's natural resources account for approximately 16 percent of Gross Domestic Product (GDP), provide 1.74 million jobs, and contribute close to half of Canada's total merchandise exports (\$201 billion in 2016).

Natural Resources Canada (NRCan) is focused on implementing the commitments articulated in the Prime Minister's mandate letter to the Minister of Natural Resources^[i], and is delivering results for Canadians across its three Core Responsibilities:

- Natural Resource Science and Risk Mitigation;
- Innovative and Sustainable Natural Resources Development; and
- Globally Competitive Natural Resources Sectors.

In 2018-19, NRCan will focus on five priority areas pertaining to clean technology and the transition to a low-carbon economy, science, market access and competitiveness, and reconciliation with Indigenous peoples.

Accelerating development of clean technology and the transition to a low-carbon economy

Transitioning to the low-carbon economy and meeting climate change targets requires an integrated approach to clean growth policy, research and regulation, as well as significant investment in clean technology.

In 2018-19, NRCan will work with the provinces, territories, Indigenous peoples and other federal partners to build on the 2017-18 **Generation Energy**ⁱ dialogue, advance joint actions under the **Canadian Energy Strategy** and implement NRCan-led initiatives under the **Pan-Canadian Framework on Clean Growth and Climate Change**ⁱⁱ. An important 2018-2019 milestone will be the release of the **Generation Energy Council Report**ⁱⁱⁱ in the late spring of 2018, with guiding advice to the Government of Canada on a long-term vision for the energy transition. Among specific actions under the **Pan-Canadian Framework**, NRCan will invest in clean energy through the **Green Infrastructure Program**^{iv}, funding research, development, demonstration and deployment projects in areas such as energy efficiency, smart grids, and reducing reliance on diesel in rural and remote communities. NRCan will also accelerate

Program^v, and will advance clean technology in Canada's natural resources sectors through the Clean Growth Program^{vi}. Furthermore, the department's engineering, scientific and technical specialists will continue collaborative work with stakeholders under the Green Mining Initiative^{vii} to develop clean technologies. As part of the Impact Canada Initiative^{viii}, NRCan will also launch a number of Clean Technology Challenges^{ix} to introduce innovative program approaches to unlock breakthrough solutions to complex and persistent problems. Collectively, these programs will improve environmental performance, and create economic opportunities in energy, forestry and mining.

NRCan's domestic initiatives are part of Canada's global leadership, and the department is supporting Canada's G7 Presidency through the **Ministerial meeting on Working Together on Climate Change, Oceans and Clean Energy**. Our program investments are also fulfilling Canada's **Mission Innovation commitment** with international partners to accelerate clean energy innovation, improve affordability, and drive economic growth by doubling federal investment in research and development over five years. Looking forward to 2019-20, Canada will host both the **4**th **Mission Innovation**^x and the **10**th **Clean Energy Ministerial**^{xi} events, and is leading or co-leading current multilateral efforts under the two Ministerial initiatives on issues ranging from Clean Energy Materials to Women in Clean Energy.

Strengthening Canada's resilience to key natural and human-induced hazards including climate change

Natural and human-induced hazards can have devastating impacts on the lives of Canadians, as well as the security of Canada's natural resource infrastructure and overall economy.

In 2018-19, NRCan will enable improved management of key risks. The department will work with provinces and territories to move the **Canadian Wildland Fire Strategy**^{xii} into its implementation phase, and will place an emphasis on fighting the spread of the **Spruce Budworm**^{xiii}. Preparedness for, and response to natural disasters will be improved by the development of new geospatial approaches to address **flood risks**^{xiv}, and completion of **enhanced earthquake monitoring infrastructure**^{xv}; in addition, all funding for **Building Regional Climate Change Adaptation Capacity and Expertise** will be fully committed to delivery organizations working with the provinces. Furthermore, actions will be taken to increase the cybersecurity of critical energy infrastructure; and, actions will be taken to strengthen regulations, increase inspections and outreach, and partner with the chemical industry and its distributors to increase awareness of and compliance with **explosives regulations**^{xvi}.

Enhancing our sustainable resource advantage through science

To maintain Canada's competitive advantage, build a more sustainable resource future, and meet the highest standards of stewardship, we must leverage our scientific knowledge and expertise. In 2018-19, NRCan will launch initiatives to advance the use of **geospatial and Earth**Observation science to better inform decisions on sustainable development. The department will move years of unprecedented data collection and analysis from the seabed towards submission to the UN for the delineation of Canada's Arctic extended continental shelfxvii. In addition to delivering the scientific mandate of NRCan, in 2018-19 the department will also support Government of Canada horizontal science priorities. This will include support for Arctic science under the Arctic Policy Frameworkxviii led by Crown-Indigenous Relations and Northern Affairs Canada for the Government of Canada, and co-developed with territories, provinces and Indigenous communities; engaging academia and industry on the exploration of opportunities for enhanced collaboration on Artificial Intelligence in the natural resources sectors; and, developing a Science Integrity Policy which protects the ability of NRCan scientists to publicly share results.

Improving market access and competitiveness

Canada is one of the world's most competitive jurisdictions in energy, mining and forestry; however, the global competitiveness landscape is evolving.

In 2018-19, NRCan will support the **Bill C-69**xix legislative processes establishing the new **Canadian Energy Regulator**xix and the **Impact Assessment Agency of Canada** to restore investor confidence, re-build public trust and advance reconciliation with Indigenous peoples. NRCan will work with the Canadian Environmental Assessment Agency and other federal partners to ensure the timely implementation of a suite of new regulations to accompany the Impact Assessment Act under Bill C-69; in particular, the department will engage its Atlantic joint management partners and the two Offshore Petroleum Boards to modernize the offshore regulatory regime. To help Canada's natural resources reach new markets, and to promote economic growth and job creation, NRCan will provide robust support for moving forward on major projects, such as Liquefied Natural Gas (LNG) and the **Trans Mountain Expansion Project**xi. Furthermore, as part of rebuilding public trust in how decisions about resource development projects are made, NRCan will co-lead with Environment and Climate Change Canada the delivery of an online **Open Science and Data Platform** which will provide public access to the science and data that support decision-making on projects, such as major pipelines and mines.

NRCan will work closely with provincial and territorial governments, Indigenous partners, as well as industry and other stakeholders to examine competitiveness issues impacting Canada's natural resources sectors to ensure that Canada seizes opportunities for economic growth and innovation. A new Canadian Minerals and Metals Plan^{xxii} will be developed together with provincial and territorial governments, Indigenous peoples, industry and other partners to position Canadian mining for long-term success at home and abroad. The Forest Bioeconomy Framework for Canada^{xxiii} – developed by the Canadian Council of Forest Ministers with key

stakeholders – will move into its implementation phase, facilitating opportunities for renewable bioenergy, biomaterials and other bioproducts that limit or reduce carbon output while preserving biodiversity. Furthermore, the department will support the **Economic Strategy Tables****xiv** initiative led by Innovation, Science and Economic Development Canada; in particular, for **Clean Technology**, and **Resources of the Future**.

Active engagement will be continued with the **United States, Mexico and priority markets in Asia** to advance Canada's natural resource sectors' interests, improve market access, promote commercial partnerships and reinforce the **mutual benefits of trade in natural resources**.

Engagement with the United States and Mexico will build upon the existing agreement for ongoing trilateral energy co-operation focussed on initiatives related to safety, security and resiliency; trade and economic development; and diversifying energy resources.

Advancing reconciliation with Indigenous peoples

The Government of Canada is committed to reconciliation with Indigenous peoples through a renewed, nation-to-nation, government-to-government, and Inuit-Crown relationship based on recognition of rights, respect, co-operation, and partnership.

In 2018-19, and across all its activities, NRCan will prioritize Indigenous Traditional Knowledge and working in partnership with Indigenous Peoples. Specific emphasis will be placed on consulting and engaging with Indigenous peoples early and meaningfully; for example, by ensuring impact assessments for major projects are informed by Indigenous Traditional Knowledge as well as robust science, and by collaborating on key initiatives such as processes for the establishment of the new Canadian Energy Regulator^{xxv}, follow-up to Generation Energy^{xxvi}, the Canadian Minerals and Metals Plan^{xxvii}, the co-developed Indigenous Advisory and Monitoring Committees for projects, as well as the department's contributions to both the Arctic Policy Framework^{xxviii} (led by Crown-Indigenous Relations and Northern Affairs Canada) and delivering the vast majority of actions committed to in the Pan-Canadian Framework on Clean Growth and Climate Change (led by Environment and Climate Change Canada). NRCan will also put emphasis on enhancing Indigenous participation in the full lifecycle of energy infrastructure projects, forestry, clean technology and green energy initiatives. Furthermore, the Indigenous culture, knowledge and representation within NRCan will be increased with recruitment, training, and awareness.

For more information on NRCan's plans, priorities and planned results, see the "Planned results" section of this report.



Planned results: what we want to achieve this year and beyond

Core Responsibilities

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:

- Strengthening Canada's resilience to key natural and human-induced hazards including climate change
- Enhancing our sustainable resource advantage through science
- Advancing reconciliation with Indigenous peoples

Planning highlights

NRCan is a science-based department. Across all of our Core Responsibilities combined, nearly half of our budget is devoted to science and close to 45% of our employees are scientists or technicians. We collaborate with other federal departments, provincial, territorial and local governments, Indigenous peoples, academic institutions, and industry to conduct research that generates knowledge, technologies and innovations which inform all of our Core Responsibilities. Our work delivers important benefits: it provides Canadians with cutting edge research to inform decisions on the management of natural resources; it gives communities the tools to protect Canadians from natural disasters and explosives; and, it provides communities and industries with the research they need to help them adapt to climate change.

Under our Core Responsibility for **Natural Resource Science and Risk Mitigation**, in 2018-19 NRCan's science and technology will improve the management of natural and human-induced hazards and emergencies through several key initiatives.

To improve Canada's ability to monitor for earthquakes nationwide and to issue faster, more robust notifications when earthquakes occur (thereby reducing earthquake damage and protecting lives and infrastructure), NRCan is completing enhancement of national **earthquake monitoring infrastructure****xix*. Similarly, to help Canadians manage the risk of floods by predicting where they are most likely to occur, NRCan is developing and implementing new geospatial data techniques and technologies to address **flood risks****xx**, and improving government emergency operational capabilities to support informed decision-making and investments to reduce the impacts of flooding in communities across Canada.

To prevent, mitigate, prepare for, and suppress the risk of wild fires, NRCan will work with provincial and territorial partners toward the implementation of the updated Canadian Wildland Fire Strategy^{xxxi}. The department will build a science framework for the first comprehensive, national wildfire risk assessment. The department will also update and expand decision tools used by stakeholders to predict fire occurrence, behaviours and severity. To

NRCan is Experimenting with Citizen Science

NRCan enlists Canadians as "citizen scientists" to fight the spruce budworm epidemic. Through the **Spruce Budworm Tracker Program**, citizen scientists conduct weekly monitoring of moth populations, and record their findings. An NRCandeveloped app logs the numbers of moths caught in traps and their locations. By quickly determining where budworm populations are rising, NRCan is able to employ early control measures to limit and prevent potential damage to our forests.

further ensure that the country's forests remain healthy now and for generations to come, NRCan science will support forest managers' efforts to slow the spread of **Spruce Budworm***xxxii*, a pest with potentially devastating impacts.

Under the **Building Regional Adaptation Capacity and Expertise** program NRCan is working in partnership with the provinces to assist low capacity organisations to plan and deliver actions to adapt to climate change, and all funding will be fully committed in 2018-19. Project proponents will identify regional needs and establish targeted priorities for regional programming that may include support for internships, professional training, and opportunities for hand-on learning.

In the realm of human-induced hazards, NRCan will strengthen the security around the **management and storage of explosives****xxiii*; specifically, awareness of and compliance with explosives regulations will be strengthened, explosives inspections and outreach will be increased, and the department will partner with the chemical industry and its distributors to mitigate risks due to explosives precursors.

NRCan has long been in the forefront of Arctic science, including the facilitation of logistics for Arctic researchers under the **Polar Continental Shelf Program***xxiv*. In 2018-19, NRCan will complete Canada's Arctic submission under the United Nations Convention on the Law of the Sea to delineate the limits of **Canada's extended continental shelf***xxxv*, the culmination of years

of unprecedented collection and analysis of data and samples from the Arctic seabed. In addition, NRCan will collaborate with the Arctic Council*xxxvi* of circumpolar nations and peoples on standards for Arctic Spatial Data Infrastructure*xxxvii* to help ensure accessible and reliable geographically-referenced data for monitoring, management, emergency preparedness and decision-making, including the integration of Indigenous science and knowledge. In an initiative which will encompass these, and other elements of NRCan's current and historical research presence in the region, the department will ensure that its Arctic science informs and supports the Arctic Policy Framework*xxxviii* to provide overarching direction to the Government of Canada's priorities, activities and investments in the Arctic, which is being co-developed in collaboration with Indigenous, territorial and provincial partners via Crown-Indigenous Relations and Northern Affairs Canada.

Recent developments towards **Artificial Intelligence** (AI) could be a game changer for all economic sectors, including natural resources. In addition to helping develop AI-enabled solutions through its innovation programs, NRCan will engage with AI leaders in academia and industry to explore opportunities for enhanced collaboration.

In addition to these focused, 2018-19 science efforts, NRCan will also enhance sharing of the full breadth of its scientific knowledge,

NRCan is Supporting Women in Science

In support of the government-wide priority to promote gender equity, NRCan emphasizes recruiting women into high-profile science and technology roles within the department, and fosters an environment where women thrive. For example, through the Clean Energy Ministerial, NRCan supports the Clean Energy, Education and Empowerment (C3E) initiative, an international platform to promote greater diversity in clean energy by encouraging women to pursue careers in the field, recognizing their achievements, and supporting their leadership.

expertise and tools which inform sound decisions about the sustainable management of our natural resources. To protect the ability of NRCan scientists to publicly share their results, and in support of the mandate of Canada's **Chief Science Advisor***xxxix*, NRCan will develop a **Science Integrity Policy**.

Planned results

Departmental Results	Departmental Result Indicators	Target	Date to achieve target	2014–15 Actual results	2015–16 Actual results	2016–17 Actual results
Canadians have access to cutting- edge research to inform decisions on the	Number of times scientific products related to natural resources are accessed by Canadians	300,000 quarterly average	March 2019	286,276	329,008	349,171
management of natural resources	Percentage of environmental assessment processes for which NRCan provided scientific and technical expertise	100%	March 2019	99%	99%	95%
	Number of times stakeholders acknowledge using NRCan's scientific and technical products in making their decisions	120 per year	March 2020	Not available*	Not available*	Not available*
	Number of training and development initiatives that enable NRCan to incorporate Indigenous traditional knowledge in conjunction with NRCan science	Target to be determined by 2018-19 baseline*	March 2020	Not available*	Not available*	Not available*
	Quality index of geographic and locational data on Canada's land resources, water and infrastructure	Target to be determined by 2018-19 baseline*	March 2019	Not available*	Not available*	Not available*

Departmental Results	Departmental Result Indicators	Target	Date to achieve target	2014–15 Actual results	2015–16 Actual results	2016–17 Actual results
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	75% (100% by March 2022)	March 2019	Not available*	Not available*	Not available*
	Number of enhanced wild fire monitoring tools using remotely sensed information	Target to be determined by 2018-19 baseline*	March 2019	Not available*	Not available*	Not available*
	Percentage of inspections of explosives rated safe**	70% (90% by March 2025)	March 2020	Not available*	Not available*	Not available*
Communities and industries are adapting to climate change	Percentage of Canadian communities and industries that have taken steps to adapt to climate change	60% for communities per year 40% for businesses per year	March 2019	Not available*	Not available*	Not available*
	Number of times NRCan products and expertise on adaptation are accessed by communities and industry	Target to be determined by 2018-19 baseline*	March 2019	Not available*	Not available*	Not available*

^{*}As per the Policy on Results, NRCan has established a new Departmental Results Framework to report its results starting in 2018-19. Under this new Framework, several indicators are new and historical information is not available.

^{**} A rating of safe indicates no major or critical defects were found in the facility inspected. For all explosive inspections showing an imminent risk to safety, a follow-up on compliance is administered. Follow-up is done through ongoing communications with inspected facilities.

Budgetary financial resources (dollars)

			2020–21 Planned spending	
\$181,158,584	\$181,158,584	\$173,913,358	\$156,496,673	

Human resources (full-time equivalents)

		2020–21 Planned full-time equivalents
1,195	1,177	1,146

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 development of clean technology and the transition to a low-carbon economy
- Improving market access and competitiveness
- Advancing Reconciliation with Indigenous peoples

It also contributes to the achievement of the following Minister of Natural Resources **Mandate Letter Commitments:**

- Develop a Canadian energy strategy with provinces and territories
- Make strategic investments in our clean technology sector
- Enhance Canada's tax measures to generate and attract more clean technology investments

Planning highlights

Canada's vast natural resource endowment creates billions of dollars in economic activity across the country. Competitive and low-carbon, environmentally sound development of our natural resources holds the potential for substantial economic growth and job creation in the coming years while reducing contributions to climate change.

Informed by 2017-18's **Generation Energy**^{xl} dialogue on Canada's energy future and the **Generation Energy Council**'s^{xli} advice and vision for the energy transition, which will be delivered to the Minister in the late spring of 2018, NRCan will pursue key activities in 2018-19 under the **Canadian Energy Strategy** - a key Minister of Natural Resources' **mandate letter commitment** – and implement NRCan led initiatives under the **Pan-Canadian Framework on Clean Growth and Climate Change**^{xlii}. This whole-of-government Framework – developed with the provinces and territories and through engagement with Indigenous peoples, for which the **First Annual Report**^{xliii} was delivered in late 2017 – aims to reduce emissions, build a thriving clean technology industry, and seize opportunities afforded by clean growth. With energy accounting for the majority of Canada's greenhouse gas emissions, energy sector initiatives – including initiatives to improve energy efficiency across all resources sectors - will be key to meeting reduction targets.

Talking to Canadians About Our Energy Future

In 2017-18, NRCan hosted the **Generation Energy** dialogue, a ground-breaking conversation with more than 380,000 Canadians and international experts. Over six months they shared their vision of how Canada could meet climate goals, create jobs and keep energy affordable. Youth, Indigenous peoples, energy experts, academia, industry, stakeholders and the public told us that:

- Collaboration between all levels of government is essential;
- The transition to a low-carbon energy future is underway, however the pace of change is still being determined;
- Canada is a global energy leader, and is well positioned to play a significant role in the global energy transition;
- Indigenous peoples must be part of decision making and economic opportunities;
- Regulatory reform, including improved transparency and communication, is fundamental to building public confidence; and,
- Technology and innovation is at the heart of the energy transition, creating opportunities for new energy industries.

In 2018-19, NRCan will continue the conversation. The **Generation Energy Council** will develop a report for the Minister that provides a vision, goals and principles, core transition themes, and key advice to guide Canada's energy transition.

Under the **Green Infrastructure Program**^{xliv} - which supports the **Pan-Canadian Framework** - NRCan will fund research, development, demonstration (RD&D) and deployment of clean energy infrastructure. This will include **Electric Vehicle Infrastructure Demonstrations** of innovative charging infrastructure; **Electric Vehicle and Alternative Fuel Infrastructure Deployment** of chargers, natural gas and hydrogen refuelling stations; deployment of promising near-commercial **Smart Grids**; projects which support development of codes for retrofits and new net-zero **Energy Efficient Buildings** through **Build Smart: Canada's Buildings Strategy**^{xlv}; projects to build the portfolio of **Emerging Renewable Power**; and, projects which support **Clean Energy for Rural and Remote Communities** by reducing reliance on diesel fuel.

Projects funded under NRCan's **Energy Innovation Program**^{xlvi} will also accelerate clean technology research and development, while the **Clean Growth Program**^{xlvii} will fund RD&D projects in the energy, mining and forestry sectors, focused on reducing emissions of greenhouse gas and air-pollutants, minimizing landscape disturbances and improving waste management, as well as promoting the production and use of advanced materials and bioproducts, energy efficiency and productivity, and the reduction of water use and impacts on aquatic ecosystems.

The Clean Growth Hub^{xlviii}, led jointly by NRCan and Innovation, Science and Economic Development Canada, will support companies and stakeholders to navigate clean technology

programming, coordinate programs to support a whole-of-government approach for clean technology projects, and advance efforts to report on the results of clean technology investments.

In collaboration with federal partners, NRCan will also support the **Pan-Canadian Framework** by contributing to the development of the **Clean Fuel Standard** and working to implement the

Government's **carbon pollution** pricing (with Environment and Climate Change Canada), as well as by providing federal leadership on **Greening Government** **lix* (in collaboration with the Treasury Board Secretariat of Canada) and developing a **National Strategy for Zero Emission Vehicles** (in collaboration with Transport Canada, Innovation, Science and Economic Development Canada, and Environment and Climate Change Canada).

For the mining sector, NRCan's **Green Mining Initiative**¹ investment in
collaborative research and development
will promote technologies that increase

NRCan is Driving Innovation

Through the **Impact Canada Initiative**, the Government of Canada is issuing challenges to Canadians and global innovators to generate novel solutions to some of the biggest issues that face Canadians and their communities.

The Clean Technology Impact stream, led by NRCan, focuses on unlocking breakthrough solutions to complex and persistent problems in developing clean technology. Starting in early 2018, a series of prize-based challenges will be launched in collaboration with the private, academic, and nongovernmental sectors to significantly advance a range of clean technology applications and accelerate our journey toward a cleaner future.

productivity and energy efficiency, and reduce emissions, waste and water use.

For the forestry sector, NRCan will continue important research on cumulative effects of natural resources development and climate change on Canada's boreal forest, their peoples and wildlife (e.g. caribou), in order to reduce impacts and develop solutions.

NRCan will also be active on the international front, as a lead department on the G7 theme of Working Together on Climate Change, Oceans and Clean Energy, one of the five themes under Canada's G7 Presidency. NRCan will work to advance long-standing energy priorities - such as energy security and clean energy innovation with the G7 Energy Ministers. To support the overarching priorities of mainstreaming gender equality and increasing stakeholder engagement during Canada's G7 Presidency, NRCan will organize outreach events to engage energy stakeholders - particularly women and youth - in a constructive dialogue around the G7 energy agenda. NRCan will assume a leadership role in the Mission Innovation is Steering Committee in 2018, working with international partners to promote clean energy innovation on a global scale, and to ensure that clean technologies are widely affordable and drive economic growth. The clean energy technology programs described above are contributing to progress on Canada's international Mission Innovation pledge to double the federal investment in clean energy research and development over five years. NRCan is making other notable Mission Innovation Contributions including co-leading the Sustainable Biofuels and the Clean Energy

Materials challenges. Further in 2018-19, NRCan will advance the work of the Clean Energy Ministerial^{lii} - a global forum to promote policies and share best practices to accelerate the transition to a low-carbon economy - by leading the Energy Management Working Group, as well as co-leading initiatives for Women in Clean Energy and Electric Vehicles, plus proposed new initiatives on Nuclear Innovation, and Carbon Capture Utilization and Storage.

Looking ahead to 2019-20, NRCan will host both the **4**th **Mission Innovation** and the **10th Clean Energy Ministerial** events. These events will provide a prime opportunity to showcase leading-edge Canadian clean energy technologies and solutions on a world stage. NRCan will use its role as host to demonstrate Canada's global leadership in the transition to clean energy, accelerate a low-carbon future through strong multilateral collaboration, and advance Canadian clean growth and climate change priorities through strengthened partnerships (e.g., provinces and territories, Indigenous peoples, women and youth).

Together, these key initiatives to accelerate the development and adoption of clean technologies in Canada's natural resource sectors, are delivering on the Minister of Natural Resources' mandate letter commitment to make strategic investments in our clean technology sector thereby growing the clean technology sector's contribution to Canada's Gross Domestic Product, creating more good-paying, middle class jobs and increasing the number of high-growth companies in Canada.

Planned results

Departmental Results	Departmental Result Indicators	Target	Date to achieve target	2014–15 Actual results	2015–16 Actual results	2016–17 Actual results
Natural resource sectors are innovative	Percentage of NRCan-funded innovation projects that result in new intellectual property, standards or regulations	5% of projects will have IP or an impact on codes, standards and regulations by project completion (typically 2-4 years)	March 2022	Not available*	Not available*	Not available*
	Percentage of NRCan-funded clean energy innovation projects advancing along the innovation scale	50% of RD&D projects advance one level on the technological readiness scale by project completion (typically 3-4 years)	March 2022	Not available*	Not available*	Not available*
	Number of NRCan-funded green mining technologies, including waste and water management, proven through demonstrations	7 technologies	March 2022	Not available*	Not available*	Not available*
	Number of new forestry products developed that are informed by NRCan tools and knowledge	2 per year	March 2019	Not available*	Not available*	Not available*
Clean technologies and energy efficiencies enhance economic performance	Success of NRCan-funded clean technology demonstrations in terms of economic performance	50% success rate measured by project completion (typically 3-4 years)	March 2022	Not available*	Not available*	Not available*

Departmental Results	Departmental Result Indicators	Target	Date to achieve target	2014–15 Actual results	2015–16 Actual results	2016–17 Actual results
	Ratio of leveraged investments in energy innovation projects funded by NRCan	1:1 ratio of industry investment to government investment	March 2019	Not available*	Not available*	Not available*
	Total annual energy savings resulting from adoption of energy efficiency codes, standards and practices	Annual savings of 600 petajoules (PJ)	December 2029	Not available*	Not available*	Not available*
Canada's natural resources are sustainable	Percentage of Canadian electricity generated from non-GHG emitting sources	90%	March 2030	80.3%	79.9%	80.8%
	Number of renewable energy projects in remote communities and off-grid industrial operations	50	December 2022	Not available*	Not available*	Not available*
	Amount of wood harvested compared to the sustainable supply	Harvest is less than sustainable supply	March 2019	155 million m³ total harvest versus total wood supply of 227 million m³	161 million m³ total harvest versus total wood supply of 226 million m³	Not available*

Departmental Results	Departmental Result Indicators	Target	Date to achieve target	2014–15 Actual results	2015–16 Actual results	2016–17 Actual results
	Change in greenhouse gas emissions resulting from NRCanfunded clean technology demonstrations	Clean Growth: 0.3 to 0.7 megatonnes in direct annual GHG reduction, dependent on projects received, success of projects and ongoing operation at full production capacity by 2026. Energy Innovation Program: 4.25 megatonnes of direct annual GHG reductions and a combined total 10-16 megatonnes GHG direct and indirect reductions per year by 2030.	March 2026 March 2030	Not available*	Not available*	Not available*
	Number of low- carbon recharging and refueling stations under development or completed	900 electric vehicle recharging stations, 15 natural gas and 12 hydrogen refueling stations	March 2026	Not available*	Not available*	Not available*
	Number of policies and initiatives developed collaboratively with Indigenous groups and communities	7 per year	March 2019	Not available*	Not available*	Not available*

^{*}As per the Policy on Results, NRCan has established a new Departmental Results Framework to report its results starting in 2018-19. Under this new Framework, several indicators are new and historical information is not available.

Budgetary financial resources (dollars)

- 1				2020–21 Planned spending	
	\$564,281,850	\$564,281,850	\$542,886,900	\$497,257,660	

Human resources (full-time equivalents)

		2020–21 Planned full-time equivalents
1,461	1,453	1,456

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:

- Strengthening Canada's resilience to key natural and human-induced hazards and climate change
- Improving Market Access and Competitiveness
- Advancing Reconciliation with Indigenous peoples

It also contributes to the achievement of the following Minister of Natural Resources

Mandate Letter Commitments:

- Modernize the National Energy Board
- Review Canada's environmental assessment processes
- Develop a North American clean energy and environment agreement

Planning highlights

Canada is one of the world's most attractive countries for investment in sustainable natural resources development. At the same time, the global environment remains complex, underscoring the importance of NRCan's continuous efforts to promote trade and to support the competitiveness of Canada's energy, mining and forestry sectors. With a prospective eye, NRCan is engaging Canadians in the future of our resource economy, working more inclusively with provinces and territories, Indigenous communities, businesses, other stakeholders and all Canadians to achieve key benefits that include enhancing the competitiveness of our natural resource sectors and improving Canada's access to new and priority markets for our natural resources.

In 2018-19, NRCan will work to enhance the global competitiveness of Canada's natural resource sectors through several key initiatives.

To enable the advancement of key projects that support economic growth and jobs for Canadians by restoring public confidence in environmental assessment processes, NRCan will support the **Bill C-69**^{liii} legislative processes towards the establishment of a new **Canadian Energy Regulator**^{liv} and the **Impact Assessment Agency of Canada**. These actions will fulfill the Minister of Natural Resources' two **mandate letter commitments** to modernize the National Energy Board to ensure it is more representative of Canada's regions and diversity and that it has greater expertise to undertake its responsibilities in considering environmental science, the

knowledge and perspectives of Indigenous peoples, and community development; and, to review Canada's environmental assessment processes to ensure that these processes are fair, rely on scientific evidence, respect the rights of Indigenous peoples and protect the environment for generations to come.

NRCan will work with the Canadian Environmental Assessment Agency and other federal partners to ensure the timely implementation of a suite of new regulations to accompany the Impact Assessment Act under **Bill C-69**. The department will engage its Atlantic joint management partners and the two Offshore Petroleum Boards to modernize the offshore regulatory regime; for example, through the **Frontier and Offshore**

The New Canadian Energy Regulator and the Impact Assessment Agency of Canada

Under **Bill C-69** - currently before Parliament - these modernized agencies would see projects built efficiently through greater transparency, predictability and timeliness in decision-making through:

- Effective governance
- Inclusive engagement
- Project selections which boost investor confidence
- Responsible development of energy resources
- Maintaining global competitiveness
- Safety and environmental protections

Clear criteria for companies seeking regulatory approval would improve project timelines and avoid duplication through the early planning and coordination with provinces, territories and more inclusive and earlier engagement with Indigenous people.

Regulatory Renewal Initiative^{lv} and the Atlantic Occupational Health and Safety Initiative^{lvi}. These initiatives will provide certainty for investors and improve the overall competitiveness of Canada's offshore sector.

Also in support of **Bill C-69**, NRCan will co-lead with Environment and Climate Change Canada on the delivery of an online **Open Science and Data Platform** which will improve access to scientific evidence used in decision-making on major projects such as pipelines and mines.

Building Trust with Earth Observations

An up-to-date understanding of the **cumulative effects of resource development** is critical to mitigating environmental impacts and building public trust. **Remote sensing is an** important input to this understanding, and a key contribution of NRCan regarding Canada's lands, water, infrastructure and natural resources.

To help Canada's natural resources reach new markets, and to promote economic growth and job creation, NRCan will provide robust support for moving forward on approved major projects, such as the **Liquefied Natural Gas** (LNG) and **Trans Mountain Expansion** Projects, as well as recently approved projects such as the NGTL Towerbirch Expansion Project, Scotian Basin Exploration Drilling Project, Kemess Underground Gold/Copper Mine, Sisson Tungsten and Molybdenum Mine, and Murray River Coal. Further to a commitment made at Energy and Mines Ministers' Conference last year, NRCan has been working with the British Columbia Government and LNG sector to examine, and identify options to overcome, potential barriers to

LNG development in Canada. LNG will play a key role in the global energy transition and offers significant opportunities to Indigenous peoples and local communities. Canada has the potential to produce and export the cleanest LNG in the world, which could grow the Canadian economy by over \$7 billion per year.

Additionally, to create a business environment that fosters innovation, productivity and investment, and that responds to changing global market conditions, NRCan will work with provincial and territorial governments, Indigenous groups and industry to examine and **address competitiveness issues in Canada's natural resource sectors**. For example, as a follow up to August 2017 discussions at the **Energy and Mines Ministers' Conference**, NRCan will work with stakeholders to examine competitiveness issues that impact Canada's oil and gas sector to ensure Canada seizes opportunities for economic growth, clean technology innovation, and emissions reductions.

NRCan will provide key support to Innovation, Science and Economic Development Canada for the **Economic Strategy Tables** initiative, a new model for industry-government collaboration, focused on turning Canadian economic strengths into global advantages. In particular, NRCan will engage closely with the **Clean Technology** and the **Resources of the Future** tables.

In forestry, the federal, provincial and territorial governments, and Indigenous partners will move into the implementation phase of the Forest Bioeconomy Framework for Canadalix, to move Canada towards global leadership in the use of forest bio-mass for advanced bioproducts and innovative energy solutions, recognizing that biomass is the only renewable source that can substitute the carbon from fossil fuels found in chemicals, plastics, and composites.

What is the Forest Bioeconomy?

The Forest Bioeconomy is economic activity generated by converting sustainably managed forest-based resources (primarily woody biomass and non-timber products), into products and services in novel or repurposed ways. It distinguishes between traditional forest products (e.g., pulp, paper, lumber), and new, advanced bioproducts (e.g., biofuels, biochemical), and biomaterials as well as advanced building systems (e.g., cross-laminated timber). It also recognizes that creative application of existing processes to new situations can achieve new solutions.

To help establish Canada as the world leader in sustainable mineral development and lay the foundation for lasting success at home and abroad, NRCan will lead the creation of a shared vision among federal, provincial and territorial governments, Indigenous peoples, industry and other partners through the Canadian Minerals and Metals Plan^{lx}. The shared vision of the Plan will be focused on ensuring the mining industry remains a significant contributor to prosperity for Canadians – providing jobs, supporting communities, and attracting investment.

To advance **shared energy objectives in North America** NRCan will work bilaterally and trilaterally with the United States and Mexico to promote energy trade and investment by facilitating cross-border infrastructure projects and improving transparency with additional energy data; to develop and diversify energy resources in a responsible manner, including in the

areas of renewable energy and nuclear power; and, to enhance energy security, affordability, grid resiliency and reliability, including by focusing on cyber security. NRCan will also enhance cybersecurity of our critical energy infrastructure by working collaboratively with North American partners, other federal departments, and industry. These actions are contributing to the delivery of the Minister of Natural Resources' mandate letter commitment to develop a North American clean energy and environment agreement.

Throughout 2017-2018, NRCan has been actively participating in NAFTA negotiations to ensure that the interests of its stakeholders are represented at the table and that trade continues to flow freely between our natural resources sectors. To date, negotiators have been successful at advancing our positions in several chapters and have reached a tentative

Meaningful Partnerships with Indigenous Peoples

The Government of Canada is committed to a renewed relationship with Indigenous peoples based on the recognition of rights, respect, cooperation and partnership. Competitive natural resources sectors can advance the economic development interests of Indigenous peoples and build capacity for participation in the broader economy; at the same time, Canada's natural resources sectors cannot be globally competitive without the participation of Indigenous peoples. The Government is strengthening the role of Indigenous peoples in project reviews, monitoring and policy development. NRCan has expanded on-the-ground engagement with Indigenous peoples through co-developed Indigenous Advisory and Monitoring Committees for the recently approved Line 3 Replacement and the Trans Mountain Expansion Pipeline projects; and, the Economic Pathways Partnership for the projects offers a single window, whole-of-government approach for facilitating access to federal economic development programs and services. The **Indigenous Partnerships Office–West** will continue to offer a coordinated approach to early and ongoing engagement on west coast energy infrastructure development, and identify concrete actions that address Indigenous priorities and interests. NRCan is also working collaboratively with Indigenous communities and peoples by conducting early, and continuous engagement with communities in the North so that Indigenous Traditional Knowledge can inform western science for decision making regarding areas of resource potential; funding activities promoting greater participation through the Indigenous Forestry Initiative; and, working to increase Indigenous participation in complex economic development opportunities, particularly in the natural resource sectors, under the interdepartmental Strategic Partnerships Initiative.

agreement on an Energy Efficiency Performance Standards Annex. As we look forward to 2018-2019, NRCan will continue to advocate our positions during the renegotiation of **NAFTA** to support the integration and competitiveness of our North American energy sector and free trade of natural resources across our borders.

In 2018-19, NRCan will also work to **enhance access to priority markets in the Asia-Pacific region**, such as China and India: advancing the interests of Canada's natural resource sectors, promoting commercial partnerships, and reinforcing the mutual benefits of natural resources trade. For example, NRCan will chair the **Canada-China Ministerial Dialogue on Clean Energy**, which will provide a forum to facilitate clean energy solutions and to expand our energy trade with China.

Planned results

Departmental Results	Departmental Result Indicators	Target	Date to achieve target	2014–15 Actual results	2015–16 Actual results	2016–17 Actual results
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 US = 24.4% of total US imports (in value) Canada's market share in the World (non-US) = 1.2% of the total World imports (in value)	December 2018	26.2% (U.S) 1.2% (global imports)	25.1% (U.S) 1.3% (global imports)	23.8% (U.S) 1.4% (global imports)
	Number of Canadian- owned resource companies operating abroad	904 per year	December 2018	Not available*	904	Not available*
	Number of NRCan-led trade and promotion missions supporting the development or expansion of market access for natural resources	26 per year	March 2019	Not available*	Not available*	Not available*

Departmental Results	Departmental Result Indicators	Target	Date to achieve target	2014–15 Actual results	2015–16 Actual results	2016–17 Actual results
	Average number of companies, provinces/ territories and Indigenous leaders participating in trade and promotion missions	Companies: 10 per year Provinces/ Territories: 2 per year Indigenous communities: 1 per year	March 2019	Not available*	Not available*	Not available*
Canadians are engaged in the future of the new and inclusive resource economy	Percentage of policy, regulatory and legislative changes with formal mechanisms for broad public engagement	70% per year	March 2019	Not available*	Not available*	Not available*
	Number of joint analytical products with provinces and territories	8 per year	March 2019	Not available*	Not available*	Not available*
	Number of Indigenous groups and communities implicated in economic development projects	15 per year	March 2019	Not available*	Not available*	Not available*
Enhanced competitiveness of Canada's natural resource sectors	Percentage of resource development project decisions on target as per timelines	100% per year	March 2019	100 %	100%	100%
	Number of times NRCan's economic and investment data are accessed	32,000 quarterly average	March 2019	31,797	34,746	31,247

^{*}As per the Policy on Results, NRCan has established a new Departmental Results Framework to report its results starting in 2018-19. Under this new Framework, several indicators are new and historical information is not available.

Budgetary financial resources (dollars)

				2020–21 Planned spending	
	\$569,046,044	\$569,046,044	\$687,164,440	\$524,385,298	

Human resources (full-time equivalents)

		2020–21 Planned full-time equivalents
343	324	255

Financial, human resources and performance information for NRCan's Program Inventory is available in the GC InfoBase. lxi

Internal Services

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 service categories that support Program delivery in the organization, regardless of the Internal Services delivery model in a department. The 10 service categories are: Management and Oversight Services; Communications Services; Legal Services; Human Resources Management Services; Financial Management Services; Information Management Services; Information Technology Services; Real Property Services; Materiel Services; and Acquisition Services.

Budgetary financial resources (dollars)

				2020–21 Planned spending	
	\$138,137,439	\$138,137,439	\$125,869,690	\$123,668,933	

Human resources (full-time equivalents)

		2020–21 Planned full-time equivalents
933	938	937

Planning highlights

NRCan's Internal Services will continue efforts undertaken in 2017-18 to support the Department in advancing the Minister's Mandate Letter commitments and Government of Canada priorities by supporting the delivery of the operational requirements. In addition to its core services to sectors, Corporate Services will enhance its monitoring and reporting capacity to equip Senior Management with better tools to delivery results to Canadians.

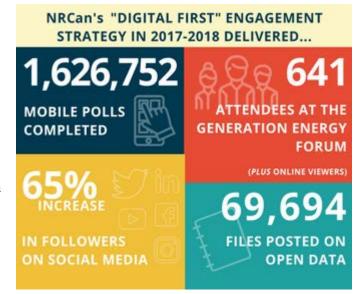
By providing corporate support, through internal monitoring and reporting, and using artificial intelligence and experimentation to make a link between strategy and operations, NRCan's corporate services will ensure that programs are equipped with the tools required to deliver results to Canadians.

Open Government and Public Engagement

As part of its Open Government agenda, NRCan continues its transition to a 'digital first' model for communications and engagement to reach Canadians on issues that matter most to them.

Prioritizing online engagement allows NRCan to reach more audiences, measure uptake and continuously improve, as well as to respond and engage Canadians in meaningful policy conversations. This is most evident in this year's national communication and engagement exercise on Canada's energy future, with over 380 000 Canadians joining the conversation on Generation Energy^{lxii}.

NRCan continues to promote the work of its scientists through media outreach and the launch of its new **Simply Science** lxiii



online magazine. The department will also continue to share scientific information through the **Open Government**^{lxiv} agenda. NRCan is leading in its contribution to open-data and working with federal partners to advance the award-winning **Federal Science Library**^{lxv} (FSL). The FSL is a public, single point of access to federal library holdings, including 80,000 maps and 520,000 photographs from NRCan collections. From the FSL web site and in library catalogues throughout the world, NRCan publications and materials are available to view and download online from a central repository.

Information Management & Technology Transformation

NRCan, in partnership with Shared Services Canada is innovating its business practices to stay current in the fast-paced technology ecosystem. Stronger planning to develop information management and technology solutions will improve the way IMT services are delivered to support the Department.

Emergency Management & Cybersecurity

NRCan supports the Government of Canada's national security agenda by providing scientific advice, guidance, and leadership to inform and protect Canadians when emergencies such as wildfires, flooding, and energy supply disruptions occur. NRCan is an active member of the security and emergency management community (in collaboration with Public Safety, Treasury Board Secretariat and other Federal partners). The Department consistently seeks to improve enhance its readiness to respond to natural disasters, therefore in 2018-19, NRCan will revisit its Emergency Procedures and implement a 3-year exercise schedule, testing and validation of its support functions.

NRCan will continue implementation of the **Cyber Security Action Plan**^{lxvi} into 2018-19 which will prevent compromises to our system; detect areas of vulnerability; and respond to cyberattacks.

Federal Infrastructure Initiative

In 2018-19, NRCan will complete delivery of the 2016 Federal Infrastructure Initiative (FII). The purpose of this initiative was to modernize science and research facilities across various locations in Canada. Investments has focused on the residual capital betterments (e.g. deferred maintenance) and laboratory modernizations to recapitalize the Department's long-term real property holdings and extend the useful life of assets. Through FII, we have invested in laboratory and facility space renovations; fume hoods and exhaust fans, and water systems; and site access and road improvements at fifteen facilities across Canada.

Workforce and Workplace

In 2018-19, NRCan will continue to foster a culture where mental health and wellness are supported in all aspects of the workplace through training, communication and engagement by continuing to implement its multi-year strategy and action plan on mental health and wellness in the workplace.

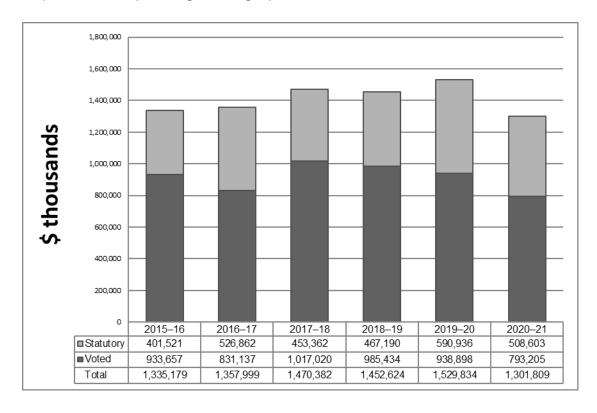
In addition, NRCan will enhance the Indigenous character of the department by supporting current Indigenous employees, actively promoting NRCan as an employer of choice for Indigenous peoples and advancing Indigenous priorities within the department through employee awareness and training.



Spending and human resources

Planned spending

Departmental spending trend graph



Budgetary planning summary for Core Responsibilities and Internal Services (dollars)

Core Responsibilities and Internal Services	2015–16 Expenditures	Expenditures	2017–18 Forecast spending	2018–19 Main Estimates	2018–19 Planned spending	2019–20 Planned spending	2020-21 Planned spending
Natural Resources Science and Risk Mitigation	\$204,218,435	\$205,782,987	\$198,683,355	\$181,158,584	\$181,158,584	\$173,913,358	\$156,496,673
Innovative Solutions and Sustainable Natural Resource Development	\$506,764,842	\$396,734,230	\$542,966,381	\$564,281,850	\$564,281,850	\$542,886,900	\$497,257,660
Globally Competitive Natural Resource Sectors	\$498,630,538	\$629,574,353	\$575,763,391	\$569,046,044	\$569,046,044	\$687,164,440	\$524,385,298
Subtotal	\$1,209,613,815	\$1,232,091,570	\$1,317,413,127	\$1,314,486,478	\$1,314,486,478	\$1,403,964,698	\$1,178,139,631
Internal Services	\$125,564,854	\$125,907,344	\$152,968,818	\$138,137,439	\$138,137,439	\$125,869,690	\$123,668,933
Total	\$1,335,178,669	\$1,357,998,914	\$1,470,381,945	\$1,452,623,917	\$1,452,623,917	\$1,529,834,388	\$1,301,808,564

For 2015-16 and 2016-17, the figures represent the actual expenditures as reported in the Public Accounts of Canada, while 2017-18 represents the forecasted expenditures to year end. For 2018-19 to 2020-21, the figures represent total planned spending, reflecting funding to support NRCan program activities.

From 2015-16 to 2016-17, NRCan expenditures increased slightly, mainly due to an increase in Statutory Atlantic Offshore payments and the implementation of the Federal Infrastructure Initiative, offset by the transfer of responsibility over the Nuclear Legacy Liabilities Program and the Port Hope Area Initiative to Atomic Energy of Canada Limited and reduced spending pertaining to the ecoENERGY for Biofuels, Windpower Production Incentive and Energy Innovation programs.

From 2016-17 to 2017-18, NRCan is forecasting an increase in spending mainly as a result of newly signed collective agreements and the increased spending profile of the Green Infrastructure envelope, the Energy Innovation program, Oil and Gas Clean Technology, and the Green Municipal Fund, offset by reductions in Statutory Atlantic Offshore payments.

The decrease between 2017-18 Forecasted spending and 2018-19 Planned spending is mainly due to the reduced funding profile of the Federal Infrastructure Initiative, the ecoENERGY for Renewable Power program and the Softwood Lumber Action Plan, the sunsetting of the Green

Municipal Fund and the Oil and Gas Clean Technology program, offset by an increase in the funding profile of the Green Infrastructure envelope, Advancing Clean Technology, and the Impact Canada initiative.

Planned spending in Voted authorities from 2018-19 to 2020-21 is declining, mainly as a result of reduced funding profiles for major initiatives and sunsetting programs. Sunsetting programs could be renewed but are subject to government's decisions to extend, reduce or enhance funding and 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, 2019 and potentially up for renewal:

- Enhancing Indigenous Participation in West Coast Energy Development;
- Enhancing National Earthquake Monitoring;
- Environmental Assessment Review Interim Strategy;
- Green Jobs;
- Federal Infrastructure Initiative;
- Genomics Research & Development Initiative; and
- World Class Tanker Safety System.

Sunsetting on March 31, 2020 and potentially up for renewal:

- Geo-mapping for Energy and Minerals;
- Major Projects Management Office;
- Marine Conservation Targets;
- Targeted Geoscience Initiative;
- Forest Innovation and Expanding Market Opportunities;
- Investments in Forest Industry Transformation Program; and
- Indigenous Forestry Initiative.

Planned spending in Statutory authorities is fluctuating from 2018-19 to 2020-21, mainly as a result of the Atlantic Offshore Accounts. Statutory payment obligations under these accords are largely driven by oil and gas 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 2017.

Planned human resources

Human resources planning summary for Core Responsibilities and Internal Services (full-time equivalents)

Core Responsibilities and Internal Services		2016–17 Actual	2017–18 Forecast	2018–19 Planned	2019–20 Planned	2020–21 Planned
Natural Resources Science and Risk Mitigation	1,229	1,208	1,220	1,195	1,177	1,146
Innovative Solutions and Sustainable Natural Resource Development	1,439	1,447	1,476	1,461	1,453	1,456
Globally Competitive Natural Resource Sectors	328	335	351	343	324	255
Subtotal	2,996	2,990	3,047	2,999	2,954	2,857
Internal Services	940	906	941	933	938	937
Total	3,936	3,896	3,988	3,932	3,892	3,794

For 2015-16 and 2016-17, the figures represent the FTEs as reported in the Departmental Results Report while 2017-18 represents the forecasted FTEs to year end. For 2018-19 to 2020-21, the figures represent total Planned FTEs to support NRCan program activities, approved by Treasury Board, to support the department's activities. NRCan's total FTE count remains relatively steady from 2015-16 to 2016-17.

The decrease between 2017-18 Forecasted FTEs and 2020-21 Planned FTEs is mainly attributed to the sunsetting of major initiatives, which were explained in the Budgetary Planning Summary Section.

Furthermore, as new initiatives are undertaken, plans for future FTE requirements will be adjusted accordingly.

Estimates by vote

For information on NRCan's organizational appropriations, consult the 2018–19 Main Estimates. lxvii

Future-Oriented Condensed Statement of Operations

The Future-Oriented Condensed Statement of Operations provides a general overview of NRCan's operations. The forecast of financial information on expenses and revenues is prepared on an accrual accounting basis to strengthen accountability and to improve transparency and financial management.

Because the Future-Oriented Condensed Statement of Operations is prepared on an accrual accounting basis, and the forecast and planned spending amounts presented in other sections of the Departmental Plan are prepared on an expenditure basis, amounts may differ.

A more detailed Future-Oriented Statement of Operations and associated notes, including a reconciliation of the net cost of operations to the requested authorities, are available on NRCan's website lxviii.

Future-Oriented Condensed Statement of Operations for the year ended March 31, 2019 (dollars)

Financial information		2018–19 Planned results	Difference (2018–19 Planned results minus 2017–18 Forecast results)
Total expenses	1,513,404,969	1,543,004,776	29,599,807
Total revenues	30,596,524	37,317,799	6,721,275
Net cost of operations before government funding and transfers	1,482,808,445	1,505,686,977	22,878,532

The increase of \$29.6 million in expenses between years is mainly explained by a \$33.5 million increase in Innovative and Sustainable Natural Resources Development mainly related to:

An increase of \$168 million in funding profiles:

- \$82 million for the Green Infrastructure envelope;
- \$50 million for Clean Growth in Natural Resource Sectors:
- \$27 million for Impact Canada Initiative Clean Technology Challenges; and
- \$9 million for the Clean-up of the Gunnar uranium mining facilities.

Offset by:

A decrease of \$107 million resulting from the sunsetting of the following programs:

• \$63 million for Green Municipal Fund;

• \$44 million for the development of cleaner oil and gas technologies.

And a decrease of \$29 million in the funding profiles:

- \$16 million for the Federal Infrastructure Initiative; and
- \$13 million for the ecoENERGY for Renewable Power program.

The charts presenting the distribution by program of Natural Resources Canada's total forecast expenses for 2017-18 and planned expenses for 2018-19 on an accrual basis are available on the NRCan's website^{lxix}.



Supplementary information

Corporate information

Organizational profile

Appropriate minister: The Honourable Jim Carr, P.C., M.P.

Institutional head: Christyne Tremblay

Ministerial portfolio:

- Atomic Energy of Canada Limited^{lxx} (AECL);
- National Energy Board (NEB);
- Canadian Nuclear Safety Commission (CNSC);
- Canada-Newfoundland and Labrador Offshore Petroleum Board (CNLOPB);
- Canada-Nova Scotia Offshore Petroleum Board (CNSOPB);
- Northern Pipeline Agencylxxv (NPA); and
- Energy Supplies Allocation Board (ESAB) (inactive).

Enabling instrument[s]:

- Department of Natural Resources Act^{lxxvi}, S.C. 1994, c. 41
- Forestry Act^{lxxvii}, R.S.C., 1985, c. F-30
- Resources and Technical Surveys Actlaxviii, R.S.C., 1985, c. R-7
- Energy Efficiency Act^{lxxix}, S.C. 1992, c. 36
- Extractive Sector Transparency Measure Act^{lxxx}, S.C. 2014, s.376
- Explosives Act^{lxxxi}, R.S.C., 1985, c. E-17

Year of incorporation/commencement: 1994

Raison d'être, mandate and role

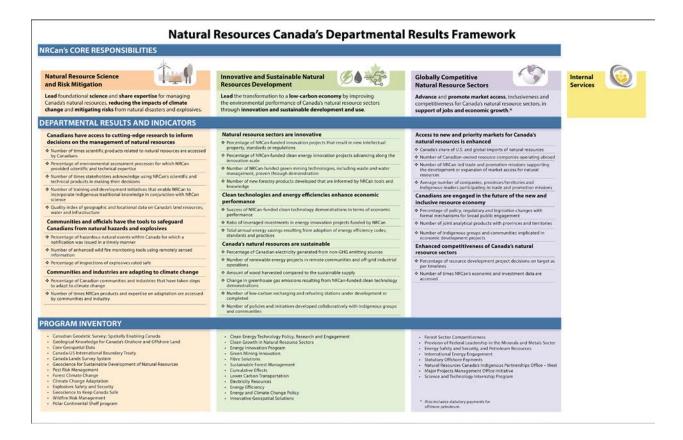
"Raison d'être, mandate and role: who we are and what we do" is available on NRCan's website lxxxii.

Operating context and key risks

Information on operating context and key risks is available on NRCan's website lxxxiii.

Reporting framework

NRCan's Departmental Results Framework and Program Inventory of record for 2018–19 are shown below:



Concordance between the Departmental Results Framework and the Program Inventory, 2018–19, and the Program Alignment Architecture, 2017–18

2018–19 Core Responsibilities and Program Inventory	2017–18 Lowest-level program of the Program Alignment Architecture	Percentage of lowest-level Program Alignment Architecture program (dollars) corresponding to the program in the Program Inventory
Core Responsibility 1: Natural Resou	rces Science and Risk Mitigation	
Canadian Geodetic Survey: Spatially Enabling Canada	3.2.1 Essential Geographic Information	22%
Geological Knowledge for Canada's Onshore and Offshore Land	1.3.3 Geo-mapping for Energy and Minerals	99%
Offshore and Offshore Land	3.2.4 United Nations Convention on the Law of the Sea	100%
Core Geospatial Data	1.2.3 Geospatial Innovation	48%
	2.3.4 Geospatial Information for Responsible Natural Resource Management	37%
	3.2.1 Essential Geographic Information	37%
Canada-US International Boundary Treaty	3.2.2 Canada's Legal Boundaries	15%
Canada Lands Survey System	3.2.2 Canada's Legal Boundaries	82%
Geoscience for Sustainable	1.3.2 Targeted Geoscience Initiative	96%
Development of Natural Resources	1.3.4 Geoscience for New Energy Supply	95%
	2.3.2 Groundwater Geoscience	88%
	2.3.3. Environmental Studies and Assessments	90%
Pest Risk Management	3.1.3 Forest Disturbances Science and Application	70%
Forest Climate Change	2.3.1 Forest Ecosystem Science and Application	29%
	3.1.3 Forest Disturbances Science and Application	5%

Climate Change Adaptation	1.2.3 Geospatial Innovation	3%
	2.3.4 Geospatial Information for Responsible Natural Resource Management	26%
	3.1.4 Climate Change Adaptation	66%
Explosives Safety and Security	3.1.1 Explosives Safety and Security	100%
Geoscience to Keep Canada Safe	1.2.3 Geospatial Innovation	1%
	1.3.2 Targeted Geoscience Initiative	1%
	3.1.4 Climate Change Adaptation	34%
	3.1.5 Geohazards and Public Safety	98%
Wildfire Risk Management	3.1.3 Forest Disturbances Science and Application	25%
Polar Continental Shelf program	3.2.3 Polar Continental Shelf Logistics Support	95%
Core Responsibility 2: Innovative S	Solutions and Sustainable Natural Resource De	velopment
Clean Energy Technology Policy, Research and Engagement	2.2.1 Materials for Energy	100%
	2.2.3 Clean Energy Science and Technology	73%
	3.1.2 Materials and Certification for Safety and Security	100%
Clean Growth in Natural Resource Sectors	N/A	N/A
Energy Innovation Program	2.2.3 Clean Energy Science and Technology	26%
Green Mining Innovation	1.2.1 Mining Innovation	100%
	2.2.2 Green Mining	100%
Fibre Solutions	1.2.2 Forest Sector Innovation	14%
Sustainable Forest Management	1.2.2 Forest Sector Innovation	10%
	2.3.1 Forest Ecosystem Science and Application	45%
Cumulative Effects	2.3.1 Forest Ecosystem Science and Application	26%
Lower Carbon Transportation	2.1.3 Alternative Transportation Fuels	100%

Electricity Resources	1.1.3 Energy Market Access and Diversification	32%
	2.1.1 Renewable Energy Deployment	100%
Energy Efficiency	2.1.4 Energy Efficiency	100%
Energy and Climate Change Policy	1.1.3 Energy Market Access and Diversification	18%
Innovative Geospatial Solutions	1.2.3 Geospatial Innovation	48%
	2.3.4 Geospatial Information for Responsible Natural Resource Management	37%
	3.2.1 Essential Geographic Information	37%
Core Responsibility 3: Globally Com	petitive Natural Resource Sectors	
Forest Sector Competitiveness	1.1.2 Forest Products Market Access and Diversification	100%
	1.2.2 Forest Sector Innovation	76%
Provision of Federal Leadership in the Minerals and Metals Sector	1.1.1 Mineral and Metal Markets Access and Diversification	100%
	1.3.1 Mineral Investment	100%
	1.3.2 Targeted Geoscience Initiative	3%
	1.3.3 Geo-mapping for Energy and Minerals	1%
	1.3.4 Geoscience for New Energy Supply	5%
	2.3.2 Groundwater Geoscience	12%
	2.3.3. Environmental Studies and Assessments	10%
	3.1.5 Geohazards and Public Safety	2%
	3.2.1 Essential Geographic Information	4%
	3.2.2 Canada's Legal Boundaries	3%
	3.2.3 Polar Continental Shelf Logistics Support	5%
Energy Safety and Security, and Petroleum Resources	1.1.3 Energy Market Access and Diversification	35%

International Energy Engagement	1.1.3 Energy Market Access and Diversification	5%
	2.1.2 Support for Clean Energy Decision- making	100%
Statutory Offshore Payments	1.4 Statutory Programs- Atlantic Offshore	100%
Natural Resources Canada's Indigenous Partnerships Office - West	1.1.3 Energy Market Access and Diversification	10%
Major Projects Management Office Initiative	1.3.5 Major Projects Management Office Initiative	100%
Science and Technology Internship Program	2.2.3 Clean Energy Science and Technology	1%

The percentages above are based in the 2017-18 Main Estimates and are subject to change based on fluctuations in funding levels.

Supporting information on the Program Inventory

Supporting information on planned expenditures, human resources, and results related to NRCan's Program Inventory is available in the GC InfoBase. lxxxiv

Supplementary information tables

The following supplementary information tables are available on NRCan's website lxxxv:

- ▶ Departmental Sustainable Development Strategy
- ▶ Details on transfer payment programs of \$5 million or more
- Disclosure of transfer payment programs under \$5 million
- ▶ Gender-based analysis plus
- Horizontal initiatives
- ▶ Planned evaluation coverage over the next five fiscal years
- ▶ Upcoming internal audits for the coming fiscal year
- ▶ Up-front multi-year funding

Federal tax expenditures

The tax system can be used to achieve public policy objectives through the application of special measures such as low tax rates, exemptions, deductions, deferrals and credits. The Department of Finance Canada publishes cost estimates and projections for these measures each year in the Report on Federal Tax Expenditures. Ixxxvi This report also provides detailed background information on tax expenditures, including descriptions, objectives, historical information and references to related federal spending programs. The tax measures presented in this report are the responsibility of the Minister of Finance.

Organizational contact information

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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 appropriated departments over a three-year period. Departmental Plans are tabled in Parliament each spring.

Departmental Result (résultat ministériel)

Any change or changes that the department seeks to influence. 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)

The department's Core Responsibilities, Departmental Results and Departmental Result Indicators.

Departmental Results Report (rapport sur les résultats ministériels)

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

experimentation (expérimentation)

Activities that seek to explore, test and compare the effects and impacts of policies, interventions and approaches, to inform evidence-based decision-making, by learning what works and what does not.

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 help identify the potential impacts of policies, Programs and services on diverse groups of women, men and gender-diverse people. The "plus" acknowledges that GBA goes beyond sex and gender differences to consider multiple identity factors that intersect to make people who they are (such as race, ethnicity, religion, age, and mental or physical disability).

government-wide priorities (priorités pangouvernementales)

For the purpose of the 2018–19 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, through an approved funding agreement, work toward achieving clearly defined shared outcomes, and which has been designated (by Cabinet, a central agency, etc.) as a horizontal initiative for managing and reporting purposes.

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.

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.

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.

priority (priorité)

A plan or project that an organization has chosen to focus and report on during the planning period. Priorities represent the things that are most important or what must be done first to support the achievement of the desired Departmental Results.

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 Alignment Architecture (architecture d'alignement des programmes)¹

A structured inventory of an organization's programs depicting the hierarchical relationship between programs and the Strategic Outcome(s) to which they contribute.

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.

^{1.} Under the Policy on Results, the Program Alignment Architecture has been replaced by the Program Inventory.

Strategic Outcome (résultat stratégique)

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

sunset program (programme temporisé)

A time-limited program that does not have an ongoing funding and policy authority. When the program is set to expire, a decision must be made whether to continue the program. In the case of a renewal, the decision specifies the scope, funding level and duration.

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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ii	Pan-Canadian Framework on Clean Growth and Climate Change,
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v	Energy Innovation Program, https://www.nrcan.gc.ca/energy/funding/icg/18876
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xvi	Explosives, https://www.nrcan.gc.ca/explosives
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xxi	Trans Mountain Expansion Project, http://www.nrcan.gc.ca/energy/resources/19142
xxii	Canadian Minerals and Metals Plan, http://www.nrcan.gc.ca/mining-materials/20240
xxiii	Forest Bioeconomy Framework for Canada, http://www.ccfm.org/english/
xxiv	Economic Strategy Tables, http://www.ic.gc.ca/eic/site/098.nsf/eng/home
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