Natural Resources Canada

2013–14

Departmental Performance Report

The Honourable Greg Rickford, P.C., M.P.
Minister of Natural Resources

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Foreword

Departmental Performance Reports are part of the Estimates family of documents. Estimates documents support appropriation acts, which specify the amounts and broad purposes for which funds can be spent by the government. The Estimates document family has three parts.

Part I (Government Expenditure Plan) provides an overview of federal spending.

Part II (Main Estimates) lists the financial resources required by individual departments, agencies and Crown corporations for the upcoming fiscal year.

Part III (Departmental Expenditure Plans) consists of two documents. Reports on Plans and Priorities (RPPs) are expenditure plans for each appropriated department and agency (excluding Crown corporations). They describe departmental priorities, strategic outcomes, programs, expected results and associated resource requirements, covering a three-year period beginning with the year indicated in the title of the report. Departmental Performance Reports (DPRs) are individual department and agency accounts of actual performance, for the most recently completed fiscal year, against the plans, priorities and expected results set out in their respective RPPs. DPRs inform parliamentarians and Canadians of the results achieved by government organizations for Canadians.

Additionally, Supplementary Estimates documents present information on spending requirements that were either not sufficiently developed in time for inclusion in the Main Estimates or were subsequently refined to account for developments in particular programs and services.

The financial information in DPRs is drawn directly from authorities presented in the Main Estimates and the planned spending information in RPPs. The financial information in DPRs is also consistent with information in the Public Accounts of Canada. The Public Accounts of Canada include the Government of Canada Consolidated Statement of Financial Position, the Consolidated Statement of Operations and Accumulated Deficit, the Consolidated Statement of Change in Net Debt, and the Consolidated Statement of Cash Flow, as well as details of financial operations segregated by ministerial portfolio for a given fiscal year. For the DPR, two types of financial information are drawn from the Public Accounts of Canada: authorities available for use by an appropriated organization for the fiscal year, and authorities used for that same fiscal year. The latter corresponds to actual spending as presented in the DPR.

The Treasury Board *Policy on Management, Resources and Results Structures* further strengthens the alignment of the performance information presented in DPRs, other Estimates documents and the Public Accounts of Canada. The policy establishes the Program Alignment

Architecture of appropriated organizations as the structure against which financial and non-financial performance information is provided for Estimates and parliamentary reporting. The same reporting structure applies irrespective of whether the organization is reporting in the Main Estimates, the RPP, the DPR or the Public Accounts of Canada.

A number of changes have been made to DPRs for 2013−14 to better support decisions on appropriations. Where applicable, DPRs now provide financial, human resources and performance information in Section II at the lowest level of the organization's Program Alignment Architecture.

In addition, the DPR's format and terminology have been revised to provide greater clarity, consistency and a strengthened emphasis on Estimates and Public Accounts information. As well, departmental reporting on the Federal Sustainable Development Strategy has been consolidated into a new supplementary information table posted on departmental websites. This new table brings together all of the components of the Departmental Sustainable Development Strategy formerly presented in DPRs and on departmental websites, including reporting on the Greening of Government Operations and Strategic Environmental Assessments. Section III of the report provides a link to the new table on the organization's website. Finally, definitions of terminology are now provided in an appendix.

Minister's Message

I am pleased to present the 2013-2014 *Departmental Performance Report* for Natural Resources Canada (NRCan).

Over the past year, the Government of Canada has been guided by one overarching goal: creating jobs, growth and long-term prosperity for Canadians. Our work to advance Responsible Resource Development is a critical element of this economic agenda. The natural resource sectors are crucial to the economic prosperity of Canadians. The numbers speak for themselves. Directly or indirectly, natural resources accounted for almost one fifth of nominal GDP and 1.8 million jobs in 2013. On average, over the last five years, natural resource sectors have contributed about $30 billion per year to government revenue.

The work of NRCan, however, is about more than just numbers. Our focus this past year has been on diversifying and expanding our markets as well as increasing public confidence while enhancing competitiveness and improving environmental performance. Much of our work makes use of science and technology knowledge to enhance safety and help unlock our resource potential. Some of our achievements over the past year include:

- promoting market diversification, trade and investment opportunities through missions and outreach activities in many areas of the world, including Israel, Europe, China, Korea, India and Mexico;
- implementing our plan for Responsible Resource Development, including the publication of new regulations that will increase the protection of the environment and streamline regulatory reviews;
- introducing new measures to ensure Canada has a means for the safest form of transportation of our energy products;
- implementing the new Emergency Geomatics Service system, used during the 2013 flood season in Manitoba and Alberta to enhance planning by emergency responders;
- supporting the market development and market access activities of forest product associations in traditional and in emerging offshore markets as well as in North America;
- enhancing energy efficiency to benefit Canadian consumers and businesses;

- advancing work on mandatory reporting for Canadian mining companies operating abroad in support of developing Canada's Corporate Social Responsibility Strategy;
- supporting improvements to the coordination of Aboriginal engagement and consultation surrounding natural resource projects, including support for the Special Federal Representative on West Coast Energy Infrastructure; and
- implementing new administrative processes that improve the efficiency of our operations.

This list is by no means exhaustive. I invite you to read this report to better understand how NRCan's achievements support responsible resource development for the benefit of all Canadians.

I look forward to another productive year in which the responsible development of our natural resources will continue to help build a prosperous Canada for generations to come.

The Honourable Greg Rickford, P.C., M.P.
Minister of Natural Resources and
Minister for the Federal Economic Development Initiative for Northern Ontario

Section I: Organizational Expenditure Overview

Organizational Profile

Appropriate Minister: The Honourable Greg Rickford, P.C., M.P.

Institutional Head: Bob Hamilton

Ministerial Portfolio:

- Atomic Energy of Canada Limited[i] (AECL);
- National Energy Board[ii] (NEB);
- Canadian Nuclear Safety Commission[iii] (CNSC);
- Canada-Newfoundland and Labrador Offshore Petroleum Board[iv] (CNLOPB);
- Canada-Nova Scotia Offshore Petroleum Board[v] (CNSOPB);
- Northern Pipeline Agency[vi] (NPA);
- Sustainable Development Technology Canada[vii] (SDTC); and
- Energy Supplies Allocation Board (ESAB) (inactive).

Enabling Instrument(s):

- *Department of Natural Resources Act*[viii], S.C. 1994, c. 41
- *Forestry Act*[ix], R.S.C., 1985, c. F-30
- *Resources and Technical Surveys Act*[x], R.S.C., 1985, c. R-7

Year of Incorporation / Commencement: 1994

Organizational Context

Raison d'être

The vision of Natural Resources Canada (NRCan) is to improve the quality of life of Canadians by creating a sustainable resource advantage. It seeks to achieve this vision by working to improve the competitiveness of the natural resource sectors and to grow their contribution to Canada's economy, by supporting the responsible development of Canada's resources in a manner that advances the country's global standing as a leader on the environment, and by using its knowledge and expertise of Canada's landmass to support the safety and security of citizens.

Responsibilities

The Minister of Natural Resources is specifically responsible for, or has responsibilities under, more than 30 acts of Parliament. The Minister's core powers, duties and functions are set forth in the *Department of Natural Resources Act*, the *Resources and Technical Surveys Act* and the *Forestry Act*. NRCan also works in areas of shared responsibilities with provinces.

To deliver on its responsibilities, NRCan relies on a number of instruments. It uses science and technology (S&T) to help address priorities and to plan for the future. It develops policies, programs, and regulations that help create a sustainable resource advantage, supporting strong, competitive natural resource sectors that are environmentally and socially responsible. And it uses partnerships and international collaboration to help drive progress on natural resource issues important to Canadians. More broadly, the Department plays a critical role in Canada's future, contributing to high-paying jobs, business investment and overall economic growth in Canada's natural resource sectors.

NRCan has offices and laboratories from coast to coast to coast. About half of its occupied facilities are in the National Capital Region, with the remainder being distributed from Atlantic Canada, through Quebec and Ontario, to the Western and Pacific Regions and Northern Canada.

Strategic Outcome(s) and Program Alignment Architecture

Strategic Outcome 1: Canada's Natural Resource Sectors are Globally Competitive

- **Program 1.1:** Market Access and Diversification
  - **Sub-Program 1.1.1:** Mineral and Metal Markets Access and Development
  - **Sub-Program 1.1.2:** Forest Products Market Access and Development
  - **Sub-Program 1.1.3:** Energy Market Regulation and Information
- **Program 1.2:** Innovation for New Products and Processes
  - **Sub-Program 1.2.1:** Mining Innovation
  - **Sub-Program 1.2.2:** Forest Sector Innovation
  - **Sub-Program 1.2.3:** Geomatics Innovation
- **Program 1.3:** Investment in Natural Resource Sectors
  - **Sub-Program 1.3.1:** Mineral Investment
  - **Sub-Program 1.3.2:** Forest-based Community Partnerships
  - **Sub-Program 1.3.3:** Targeted Geoscience Initiative 4 (TGI-4)
  - **Sub-Program 1.3.4:** Geo-mapping for Energy and Minerals
  - **Sub-Program 1.3.5:** New Energy Supply
  - **Sub-Program 1.3.6:** Major Projects Management Office Initiative
- **Program 1.4:** Statutory Programs –Atlantic Offshore

Strategic Outcome 2: Natural Resource Sectors and Consumers are Environmentally Responsible

- **Program 2.1:** Energy-Efficient Practices and Lower-Carbon Energy Sources
  - **Sub-Program 2.1.1:** Renewable Energy Deployment
  - **Sub-Program 2.1.2:** Support for Clean Energy Decision-making
  - **Sub-Program 2.1.3:** Alternative Transportation Fuels
  - **Sub-Program 2.1.4:** Energy Efficiency
- **Program 2.2:** Technology Innovation
  - **Sub-Program 2.2.1:** Materials for Energy
  - **Sub-Program 2.2.2:** Green Mining
  - **Sub-Program 2.2.3:** Clean Energy Science and Technology
- **Program 2.3:** Responsible Natural Resource Management
  - **Sub-Program 2.3.1:** Forest Ecosystem Science and Application
  - **Sub-Program 2.3.2:** Groundwater Geoscience
  - **Sub-Program 2.3.3:** Environmental Studies and Assessments
  - **Sub-Program 2.3.4:** Radioactive Waste Management
  - **Sub-Program 2.3.5:** Earth Observations for Responsible Development of Natural Resources

Strategic Outcome 3: Canadians have Information to Manage their Lands and Natural Resources, and are Protected from Related Risks

- **Program 3.1:** Protection for Canadians and Natural Resources
  - **Sub-Program 3.1.1:** Explosives Safety and Security
  - **Sub-Program 3.1.2:** Materials and Certification for Safety and Security
  - **Sub-Program 3.1.3:** Forest Disturbances Science and Application
  - **Sub-Program 3.1.4:** Climate Change Adaptation
  - **Sub-Program 3.1.5:** Geohazards and Public Safety
- **Program 3.2:** Landmass Information
  - **Sub-Program 3.2.1:** Essential Geographic Information
  - **Sub-Program 3.2.2:** Canada's Legal Boundaries
  - **Sub-Program 3.2.3:** Polar Continental Shelf Logistics Support

- **Program 4.1:** Internal Services

Organizational Priorities

In 2013-14, NRCan supported key government priorities. The Department played a lead role in 1) diversifying markets for Canada's natural resources, 2) implementing responsible resource development, 3) conducting science and innovation for competitiveness and environmental protection, and 4) making use of science and technology to ensure the safety and security of Canadians and public confidence. It also continued to enhance the effectiveness and efficiency of its internal operations. Work on these priorities helped guide the Department in its efforts to follow through on its Strategic Outcomes and support broader Government of Canada priorities.

Details on each of the priorities and how NRCan made progress on them are presented below.

Organizational Priorities

Priority	Type[1]	Strategic Outcome(s) [and/or] Program(s)
Expand markets and global partnerships	Previously Committed to	P 1.1 – Market Access and Diversification P 1.2 – Innovation for New Products and Processes
Summary of Progress		
NRCan worked to expand existing markets, open new markets, address market access barriers and promote investment in Canada as well as Canadian investment abroad by engaging with key foreign governments, both bilaterally and multilaterally. • NRCan continued to brand Canada globally as a responsible resource developer. For example, the Department assisted the Minister in undertaking an advocacy program to address market barriers to Canadian crude oil, travelling to Europe to discuss Canada's concerns with the European Commission's Fuel Quality Directive (FQD). A key accomplishment was to produce a study that demonstrated significant flaws in the previous methodology in calculating the FQD's crude intensity default values. NRCan officials participated in subsequent fora on the FQD in Brussels to discuss Canada's concerns. NRCan officials also undertook discussions with their counterparts in California to discuss that state's Low Carbon Fuel Standard (LCFS) and several potentially discriminatory components therein. Departmental officials also briefed the Canadian oil sands industry and Alberta officials on potential risks in the evolution of LCFS and carried out a Canadian engagement strategy to mitigate these risks. This outreach highlighted several links between various actors working on both the LCFS and the FQD and helped to better inform Canada's position on both files. • NRCan was very active in the Asia-Pacific region over 2013-14 and worked with counterparts in Foreign Affairs, Trade and Development Canada (DFATD) to achieve the following successes: o In India, NRCan supported work to develop the Canada-India Ministerial Energy Dialogue, following up on the Prime Minister's prior commitment. The Prime Minister then followed this		

1 Type is defined as follows: previously committed to—committed to in the first or second fiscal year prior to the subject year of the report; ongoing—committed to at least three fiscal years prior to the subject year of the report; and new—newly committed to in the reporting year of the RPP or DPR. If another type that is specific to the department is introduced, an explanation of its meaning must be provided.

up with a Mission to India in early 2014, during which trade and investment opportunities for Canadian energy supply to meet Indian energy demand were promoted.

- In March 2014, Canada and South Korea announced the successful conclusion of a free trade agreement, Canada's first in an Asian market. Among other benefits, this agreement will support Canada's forest sector, including by phasing out all existing tariffs, the establishment of a working group on building products and a subcommittee on trade in forest products. The Minister also travelled to Korea to speak at the World Energy Congress to emphasize the importance of market diversification for Canadian oil and gas exports.
- In Japan, the Minister and his Japanese counterpart signed the Statement on Oil and Gas Cooperation, intended to strengthen Canada's energy cooperation with Japan and establish an annual bilateral high-level policy dialogue on energy. NRCan also met with officials from China in Canada to provide further information on Canada's vast crude oil and natural gas resources and pipeline regulatory framework.
- NRCan also worked in China to highlight the role Canadian energy exports could play in that country's economy in support of Canada's energy diversification.

- In coordination with DFATD, NRCan continued to analyze and provide input into energy-related negotiations with several trade partners, including Japan, the European Union, Korea (as previously described) and the Trans-Pacific Partnership. NRCan also co-led the Energy, Mining and Agriculture group under the Japan Economic Partnership Agreement negotiations. These agreements would build on other successes in the 2013-14 period, such as Canada and the European Union's announcement that they had reached an agreement in principle, expected to result in the Comprehensive Trade and Economic Agreement (CETA).
- NRCan supported trips to Washington, New York and Houston, where the Minister emphasized the importance of the Canada-US energy relationship including trade and investment advantages and opportunities. NRCan officials also continued to work with their US counterparts to advance trade and investment discussions as part of the Clean Energy Dialogue.

  In 2013-14, NRCan supported its Minister and the Prime Minister in Mexico for the North American Leaders' Summit, which resulted in agreement for a trilateral meeting of North American Energy Ministers later in the year. Also in 2013-14, NRCan officials hosted the Canada-Mexico Energy Working Group, a part of the Canada-Mexico Partnership, sharing information on Canada's renewed regulatory system and partnership opportunities, particularly in unconventional oil and gas.
- NRCan worked with DFATD to finalize the terms of reference for the review of the Government of Canada's Corporate Social Responsibility Strategy. It supported the Prime Minister's commitment at the G8 Summit to improve transparency and accountability in the extractive sector.
- NRCan supported the fall meeting of the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF). At the sessions, Canadian representatives exchanged extractive sector partnership best practices and established relationships with several new IGF participants. Further, NRCan was elected Vice-Chair for North America on the IGF Executive Committee for two years (October 2013 to October 2015).
- In 2013-14, NRCan supported market development and market access activities of forest product associations in traditional and emerging offshore markets and in North America. The offshore activities position Canada as a world leader in sustainable forest management and a preferred supplier of sustainable forest products. The North American activities aim to increase wood use in non-residential and mid-rise construction and support forest science research to inform sustainable forestry practices in Canada's boreal forest.

Priority	Type	Strategic Outcome(s) [and/or] Program(s)
Unlock resource potential through responsible development	Previously Committed to	P 1.1 – Market Access and Diversification P 1.3 – Investment in Natural Resource Sectors P 2.1 – Energy-Efficient Practices and Lower-Carbon Energy Sources P 2.3 – Responsible Natural Resource Management P 3.2 – Landmass Information

Summary of Progress

To achieve this priority, NRCan provided federal leadership by working with federal regulatory departments and agencies to implement the Government's plan for Responsible Resource Development, and disseminated scientific knowledge necessary to understand and identify areas that hold the most resource development potential.

- NRCan's supported the development of a suite of Responsible Resource Development (RRD) regulations, 11 of which were published in 2013-14. It also supported the legislative changes for pipeline and offshore liability, as well as measures to ensure a world-class marine safety regime. With support from its federal partners, the Department continued to drive system-wide improvements to the regulatory system for major resource projects in Canada.
- NRCan oversaw the whole-of-government approach to Aboriginal consultation for major resource projects, and integrated, to the extent possible, Aboriginal consultation into environmental assessments and project reviews. In 2013-14, the Department also played a central role in supporting the work of the Special Federal Representative on West Coast Energy Infrastructure, which concluded with a final report that was publicly released in December 2013.
- At the 2013 Energy and Mines Ministers' Conference, federal, provincial and territorial (FPT) Ministers endorsed five priorities for the Regulatory Reform Working Group (which NRCan co-chairs): 1) supporting improvements to the coordination of Aboriginal engagement and consultation, 2) clarifying information requirements for FPT review processes, 3) further exploring potential areas for regulatory reform to strengthen the effectiveness and efficiency of major project reviews, 4) continuing implementation of RRD by encouraging greater uptake of key tools and processes, such as substitution provisions, and 5) advancing opportunities to demonstrate the effectiveness of FPT review processes.
- As of March 31, 2014, NRCan's Major Projects Management Office managed a portfolio of approximately 80 projects, representing a total capital investment of nearly $230 billion.
- NRCan continued to support the Minister in the Government's implementation of pipeline and marine safety measures by identifying issues, providing sound advice, and ensuring a coordinated, whole-of-government approach to implementing the measures that impact major project reviews.
- NRCan prepared the Treasury Board submissions and provided advice and recommendations to Cabinet Ministers regarding the approval of four long term liquefied natural gas (LNG) export licences, several variances to pipeline certificates, and recommendations for decisions on two pipeline projects. The formal agreements for the provision of the loan guarantee for the Lower Churchill River hydroelectric projects concluded.
- Through its Targeted Geoscience Initiative 4 (TGI-4), NRCan contributed a number of geoscience publications and presentations to the public domain to help industry uncover deep, hidden mineral deposits. Sourced from study sites across Canada, these publications include geoscience knowledge products and innovations (e.g., geochemical, geophysical, mineralogical, and 3D modelling tools),

and which are currently being adopted and used by the exploration service industry and mineral exploration clients. More than 300 publications and 450 public engagement products (such as workshops and conference proceedings) are now available online.

- Through its Geo-mapping for Energy and Minerals (GEM) program, NRCan continued to improve public understanding of the resource potential in the North by releasing almost 800 products and contributing more than 200 regional scale maps in 2013-14. The high-impact scientific results included 32 new knowledge products on Nunavut's Kivalliq region, presented by the Prime Minister in August 2013 when he also announced the launch of a second phase of the GEM program for another 7 years; GEM-2 will continue to modernize geological knowledge and enhance understanding of mineral and energy systems in high-priority areas in the North, in collaboration with Northerners, their institutions and provincial and territorial representatives.
- NRCan's Ecosystem Management Emulating Natural Disturbance project yielded results for responsible resource development in 2013-14. For example, NRCan provided information to provincial forestry committees on modelling best practices, and to companies on how to take caribou and marten populations into consideration to maintain ecosystem integrity.
- In December 2013, the Commission on the Limits of the Continental Shelf received Canada's submission to delineate an extended continental shelf zone for Canada in the Atlantic Ocean. At the same time, preliminary information was filed for the Arctic Ocean, indicating an intention to file a full submission at a later date. This highly technical document is developed in collaboration with the Fisheries and Oceans Canada and Foreign Affairs, Trade and Development Canada.
- NRCan provided leadership within Canada's federation by developing and tabling a report on labour market imbalances at the Energy and Mines Minsters' Conference. NRCan also collaborated with provinces and territories to advance work on shale oil and gas, renewable energy, energy transportation and energy efficiency, priorities that were discussed by energy ministers at the 2013 Conference in Yellowknife.

Priority	Type	Strategic Outcome(s) [and/or] Program(s)
Innovate for competitiveness and environmental performance	Previously Committed to	P 1.1 – Market Access and Diversification P 1.2 – Innovation for New Products and Processes P 2.1 – Energy-efficient Practices and Lower-Carbon Energy Sources P 2.2 – Technology Innovation P 2.3 – Responsible Natural Resource Management

Summary of Progress

NRCan continued its work to enhance energy efficiency in the residential, commercial and institutional, industrial and transportation sectors, pursue S&T projects on unconventional oil and gas, promote the development and use of innovative energy technology, support the production and use of alternative transportation fuels, and advance innovation in green mining.

- In 2013-14, the ecoENERGY Efficiency program achieved more than 22 petajoules (PJ) of energy savings by providing process and technology solutions to make housing, buildings, industry, vehicles and equipment more energy efficient and energy performance more visible.
- NRCan's ecoENERGY for Biofuels program supported the private sector's development of renewable

alternatives to gasoline and diesel. Despite changes in the marketplace and other factors, NRCan was able to maintain the total built production capacity of 1.88 billion litres of ethanol and 575 million litres of biodiesel, slightly lower than that achieved in 2012.

- NRCan signed agreements with foreign partners in Israel to collaborate on common energy interests. In 2013-14, NRCan also launched a second call for proposals on additional energy R&D projects.
- In 2013-14, NRCan signed 9 contribution agreements with external project proponents, bringing to 62 the number of agreements signed through the ecoENERGY Innovation Initiative. Including money from private sector proponents, $289 million has been leveraged to date for clean energy research. One notable example is a project on carbon capture and storage project to identify options for the Athabasca area of Alberta.
- NRCan continued to advance Canada's international climate change objectives in a range of climate change and clean energy-related fora. For instance, NRCan's energy efficiency initiatives, efficient street lighting tool, and energy management systems were promoted at the fourth Clean Energy Ministerial, a global forum. NRCan also continued to support the operationalization of the Climate Technology Centre and Network under the United Nations Framework Convention on Climate Change's (UNFCCC), which will facilitate the deployment of climate-friendly technologies in developing countries.
- NRCan supported partners in producing 15.7 TWh of renewable power in 2013-14 through its ecoENERGY for Renewable Power and Wind Power Production Incentive programs. Canadian Standards Association standards and other international codes and standards were advanced based on the research conducted at NRCan's CanmetMATERIALS laboratory, the largest research centre in Canada dedicated to the fabrication, processing and evaluation of metals and materials. These included a standard on oil and gas pipe systems and a new standard on field applied external coatings for pipeline systems. Research on fracture, welding and corrosion was also advanced through national and international collaborations with the pipeline industry and its associations, universities and other government agencies to support the design, construction and operation of new and existing pipelines.
- NRCan, through its Investments in Forest Industry Transformation (IFIT) program, supported two new projects in 2013-14 that are world-first demonstrations of Canadian technologies. In doing so, NRCan demonstrated its commitment to emerging technologies in the forest sector through targeted investments in integrated biorefineries that are capable of efficiently converting biomass into high-value bioproducts.
- NRCan advanced the restructuring of Atomic Energy of Canada Limited (AECL) by working closely with Public Works and Government Services Canada, Justice Canada, AECL, central agencies and external advisors. In 2013-14, NRCan launched the procurement process to obtain the services of a private-sector contractor to manage and operate AECL's Nuclear Laboratories through a Request for Response Evaluation, during which interested bidders are evaluated to assess whether they meet mandatory technical, financial and security requirements.
- To date, NRCan's obligations under the current pilot plant project using supercritical water bitumen processing have been exceeded and NRCan continues to work with its Japanese partner on a two-month extended contract to fulfill the needs of the state-run Japan Oil, Gas and Metals National Corporation.
- In 2013-14, two of the three projects supported by NRCan's Isotope Technology Acceleration Program (ITAP) were successfully demonstrated and made public announcements regarding the commercial production of technetium-99m (Tc-99m) for medical purposes using a cyclotron at a scale sufficient for a metropolitan area.
- NRCan's partnership with Purdue University on bio-char technology, to reduce metal contamination in

soils, yielded lab-scale results in 2013-14, suggesting viability of larger-scale demonstration projects.

- In 2013-14, NRCan developed a method to assess the effects of residual stress on steel tubes manufactured at two Canadian tube production mills. This modelling method, when fully deployed, will allow for lightweight tubes to be used in vehicle manufacturing, reducing fuel use.

Priority	Type	Strategic Outcome(s) [and/or] Program(s)
Leverage S&T knowledge for safety and security risk management	Previously Committed to	P 2.3 – Responsible Natural Resource Development P 3.1 – Protection for Canadians and Natural Resources P 3.2 – Landmass Information

Summary of Progress

Through collaboration with federal, provincial and territorial partners as well as academia, industry stakeholders and key international organizations, NRCan continued to drive innovation of the Canadian Geospatial Data Infrastructure, ensuring that high-value, open, standards-based geodata, such as topographic and geoscience maps, were available to Canadians. Additionally, the Department delivered reusable open data applications (e.g., Canadian digital elevation data, GeoGratis) and tools, leading to cost-effectiveness in technology use.

NRCan also continued to prepare for and manage risks and emergencies as they related to its mandate.

- NRCan's GeoGratis application was improved to provide easier access to 182,000 Earth Sciences web resources (datasets, maps, publications). The Department also published 426 new publications via GeoGratis in 2013-14, including 244 open files, 124 maps, 20 research documents and general information products. Other work completed by NRCan included the digitizing and re-releasing to the public an additional 736 publications and updated datasets pertaining to the National Road Network, National Hydro Network, National Railway Network, and Atlas of Canada.
- NRCan's new Emergency Geomatics Service system was used during the 2013 spring flood season in Manitoba (Red River, Assiniboine River) and Alberta (High River). Near real-time open water flood extent maps, derived from Radarsat-2, were provided to provincial and municipal authorities to enhance the situational awareness of managers and responders. These maps served to improve planning, execution, and evaluation of emergency management operations, and guide responders engaged in tactical response.
- NRCan expanded the reach of its Climate Change Adaptation Platform to more than 200 members in 2013-14, allowing for greater sharing of knowledge, improved dialogue and coordination on adaptation initiatives. In the same time period, 43 new products were delivered and $3.85 million was approved, in addition to more than $4 million leveraged from the public and private sectors, for 36 new cost-shared projects that will help Canadians adapt to a changing climate.
- In 2013-14, NRCan co-hosted the Conference of the International Boreal Forest Research Association and presented a number of papers reviewing scientific literature on Canada's boreal zone. These presentations advanced participants' knowledge on a number of topics, including the climate change, disturbances, and the need for closer collaboration amongst the circumboreal countries. It also enabled the exchange of knowledge related to best practices in boreal forest management on a region-specific basis. These papers were published in the journal *Environmental Reviews* beginning in December 2013 and will continue into 2014.
- NRCan provided remote sensing methods, tools and data for regulatory compliance monitoring and cumulative environmental impact assessments in 2013-14. Three key oil sands regulators have now

begun to integrate NRCan's methods and project results into their programs. This scientific support relates to NRCan's expertise in the acquisition, calibration, correction and transformation of earth observation data, resulting in improvements in information quality and subsequent usage for environmental monitoring.

- NRCan conducted inspections in 2013-14 related to explosives, ensuring that facilities working with explosives were conducting their work in a safe and secure manner.
- NRCan continued to conduct leading edge science and research on Canada's unconventional oil and gas resources to ensure they are developed safely and responsibly. NRCan has disseminated research results and factual information addressing public concerns with aspects of unconventional oil and gas development, including hydraulic fracturing, induced seismicity and the protection of groundwater.

Priority	Type	Strategic Outcome(s) [and/or] Program(s)
Increase the effectiveness and efficiency in NRCan operations	Previously Committed to	P 4.1 – Internal Services

Summary of Progress

NRCan focused on transforming the way it delivers internal services such as human resources, information management, and capital investments. In so doing, the Department increased efficiency and effectiveness of its operations.

- NRCan completed its implementation of the Common Human Resources Business Process (CHRBP) ahead of the March 31, 2014 deadline. The Department also completed its business process analysis for all seven CHRBP processes, implementing 25 identified opportunities for improvement to processes.
- NRCan's new document management application, GCDOCS, was advanced substantially in 2013-14. Key milestones completed include the development and approval of the Project Management Plan, employee engagement, functional testing, completion of pilots, and implementation in some parts of the Department.
- NRCan launched its new consolidated Internet website in December 2013, replacing the existing collection of branch, sector and corporate websites. This transformation resulted in a streamlined Web presence and the archiving of 14,000 web pages, consistent with the Government of Canada Standard on Web Usability. Further, Web performance measurement capabilities have been upgraded so that all web pages and web applications are being monitored by Google Analytics, a centrally managed web analytics tool.
- Progress was made in implementing NRCan's Values and Ethics (V&E) Code. Specifically, NRCan undertook consultations on the new employee conflict of interest self-declaration tool, updated internal V&E tools and resources, and launched an initiative to inform employees of services available to them.
- NRCan continued to improve its service to Canadians and its employees in both official languages, including through implementing all of the Department's 2011-14 Official Languages Action Plan initiatives. It also implemented many initiatives from its 2012-15 Employee Equity Action Plan.
- NRCan's Investment Plan was approved by the Treasury Board in September 2013. To support

subsequent planning activities and the delivery of investments, NRCan reviewed relevant frameworks and worked to streamline them.

- Finally, NRCan continued to support its human resource priorities by focusing on the Employee Performance Management Program as the foundation for effective talent management, leadership development, and strengthened management capacity. It provided training to its managers and supervisors on performance management, strengthened internal governance to support implementation of the Directive on Performance Management, and developed communications, tools and resources.

Risk Analysis

As a large and diverse organization, NRCan prepares for and manages a wide range of risks. The Department's approach to risk management is based on the recognition that a solid understanding of the risk environment is fundamental to achieving its Strategic Outcomes. Risk identification is a key part of NRCan's planning process, and risks are important drivers in the establishment of priorities for the Department.

High-level strategic and operational risks are presented in NRCan's Corporate Risk Profile, which is monitored and updated regularly. Operationally, one of the Department's primary ongoing focuses continues to be the prudent and efficient management of its financial resources. From a strategic perspective, NRCan manages risks to support Canadians and the natural resource sectors. Two of these risks—Market Access and Investment Climate and Hazards and Emergency Management—are discussed here.

Resource context

Canada has vast energy, mineral and forest resources, which are critical to its economic prosperity. This resource wealth indirectly and directly contributes to almost one-fifth of the country's nominal Gross Domestic Product and close to 1.8 million jobs. The importance of natural resources to the Canadian economy could grow further if, for example, the oil sands crude oil production more than doubles over the next 15 years, from 1.9 million barrels per day to 4.8 million barrels per day by 2030, as currently projected.

With a supply of natural resources far outpacing domestic demand, Canada must ensure that it can access foreign markets if it is to maintain and grow the economic benefits from its resource endowment. Canadian natural resources must have export destinations. As the United States is expected to be almost self-sufficient in energy, in net terms, by 2035, Canadian export destinations must increasingly be outside traditional markets. Countries such as China, which has already surpassed the United States as the world's largest energy consumer, and India, slated to become the third largest energy consumer by 2030, represent important opportunities for Canada to expand markets. However, Canada has been keen to expand and strengthen existing markets too, in an effort to build resilience into its export strategy. In October 2013, for example, Canada and the European Union announced an agreement in principle on a Canada-European Comprehensive Economic and Trade Agreement (CETA), which will significantly boost two-way trade and investment. Once the CETA comes into force, it will immediately eliminate all tariffs on Canadian forest, minerals, metals and energy products, and will support bilateral dialogues in forestry and raw materials.

A number of factors influence the ability of natural resource sectors to get resources to market, and each of these contributed to the resource-based risks faced by Canada and managed, in part, by NRCan. These include Canada's investment climate, the infrastructure to support harvesting resources and transporting them to market, and Canada's international reputation in those potential markets. These risk drivers are discussed below, while NRCan's strategy for managing them is addressed in the table following this section.

Canada needs to maintain an attractive business environment for natural resource projects as well as Canadian trade globally. A lack of critical infrastructure to bring resources to terminals or ports is a risk for the natural resource sectors. If pipelines, rail networks and roads – as well as the support to maintain them as safe and reliable transportation routes – are not sufficient, then the opportunities for the natural resource sectors will be diminished. Furthermore, if transportation infrastructure is not managed with the utmost regard to safety, the public confidence in the environmental safety of natural resource projects, or even in the entire industry, would erode, decreasing the support for projects by local First Nations. As well, Canada's international reputation relating to its environmental performance could impact the access to foreign markets for Canadian natural resource exports.

Key Risks

Risk	
Risk Response Strategy	**Link to Program Alignment Architecture**
Market Access and Investment Climate	
NRCan will continue to manage this risk through working with several other federal departments, provincial and territorial governments and representatives from the private sector to 1) promote and brand Canada abroad as a reliable and environmentally responsible trade partner, including through focused, Ministerial missions; 2) engage with Aboriginal peoples and other Canadians on the potential benefits as well as on approaches to mitigate any environmental risks associated with resource development; 3) make the regulatory review process at home more predictable and efficient while ensuring sound environmental stewardship; and 4) develop appropriate regulations. In 2013-14, NRCan undertook a number of specific initiatives to address the risks and opportunities identified above, which included: • Supporting diversified market access and increased investment through promotion of Canada as a responsible resource developer in Israel, across Europe and in the Asia-Pacific Region. NRCan also continued to strengthen its bilateral engagement with the United States. • Participating in major international trade shows such as BC Mineral Roundup, China Mining, Mining Indaba, Chile's Expomin and the Prospectors and Developers Association of Canada's Annual Convention and Tradeshow to promote Canada as a destination for foreign direct investment. • Working with partner departments, provinces and key stakeholders to ensure the safety and security of critical resource infrastructure through strengthening world-class pipeline and marine safety regimes. • Implementing the plan for Responsible Resource Development to advance system-wide transformation of the federal regulatory system, including by delivering and managing predictable and timely project reviews, reducing regulatory burdens, improving environmental protection, and providing consistent, meaningful and timely Aboriginal consultation. These and other commitments that helped mitigate this risk are described throughout the Departmental Performance Report in the sections identified under the links to the Program Alignment Architecture.	1.1.2 – Forest Products Market Access and Development 1.1.3 – Energy Market Regulation and Information 1.3.1 – Mineral Investment 1.3.6 – Major Projects Management Office Initiative 2.2.1 – Materials for Energy 2.3.1 – Forest Ecosystems Science and Application
Hazards and Emergency Management	
As a core part of NRCan's mandate, the *Emergency Management Act* (EMA) outlines the accountabilities of federal ministers and their responsibilities relating to emergency management in Canada. In accordance with the EMA, and in relation to the Minister's mandate, NRCan has specific accountabilities	2.3.4 – Radioactive Waste Management

for contributing to the safety and security of Canadians and the international community. These responsibilities are met through the provision of timely and accessible information on Canada's natural resources and landmass to be used by the public and stakeholders to prepare for and respond to emergencies. The Department also conducted risk assessments that support the development of policies, programs and regulations and ensure learning from incidents and availability of scientific research, tools and techniques to promote resilience within the natural resource sectors. In 2013-14, NRCan undertook a number of specific initiatives to address its responsibilities, which included: • Working with the Alberta's Environment and Sustainable Resource Development branch to plan the integration of NRCan satellite-earth observation methods into the mapping for fire management in the Alberta oil sands region. That province is also utilizing hyperspectral data funded by NRCan to support the development of land reclamation tools. • Partnering with the Canadian Geotechnical Society to develop and release the Canadian technical guidelines and best practices related to landslides and loss reduction. • Working with Alberta Energy Regulator (AER) to develop internal capacity to understand and model surface deformation related to the in situ extraction of bitumen. Project deformation results shared with AER helped the regulator to develop an informed decision for bitumen spill in the Cold Lake region. • Completing ongoing enhancements to the Canadian Wildland Fire Information System, including the Fire Monitoring Accounting and Reporting System. The Canadian Fire Resource Demand System is now operational and integrates weather forecasts, statistical fire occurrence models, resource use variables, and expert opinion to provide wildfire managers with forecasts of fire load and fire resource demand and availability across the country. The System was used in 2013 by British Columbia, which enabled it to transfer resources to help fight large fires in Quebec. • Contributing to the development of a revised National Disaster Mitigation Program to reduce the impact of future natural disasters and inform NRCan's development of proposed real-time earthquake and tsunami alerting systems. • Engaging in the Government of Canada All-Hazard Risk Assessment effort, the Federal Nuclear Emergency Plan national exercise and the review of the Federal Emergency Response Plan. • Supporting stakeholders in their use of NRCan's new Emergency Geomatics Service system during the 2013 spring flood season in Manitoba (Red River, Assiniboine River), and Alberta (High River). These and other commitments that helped mitigate this risk are described throughout the Departmental Performance Report in the sections identified under the links to the Program Alignment Architecture.	2.3.5 – Earth Observation for Responsible Resource Development 3.1.2 – Materials and Certification for Safety and Security 3.1.3 – Forest Disturbances Science and Application 3.1.5 – Geohazards and Public Safety 3.2.1 – Essential Geographic Information 4.1 – Internal Services

Actual Expenditures

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	Difference (actual minus planned)
2,767,014,238	2,767,784,129	2,373,283,282	2,091,044,593	(676,739,536)

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
4,156	4,033	(123)

Budgetary Performance Summary for Strategic Outcome(s) and Program(s) (dollars)

Strategic Outcome(s), Program(s) and Internal Services	2013-14 Main Estimates	2013-14 Planned Spending	2014-15 Planned Spending	2015-16 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2012-13 Actual Spending (authorities used)	2011-12 Actual Spending (authorities used)
Strategic Outcome 1: Canada's Natural Resource Sectors are Globally Competitive								
Market Access and Diversification	44,912,875	44,912,875	56,085,530	43,497,846	61,396,582	59,733,334	55,420,361	*
Innovation for New Products and Processes	102,524,720	102,524,720	67,598,586	66,175,755	105,039,435	94,093,063	93,948,144	*
Investment in Natural Resource Sectors	54,483,815	54,483,815	55,641,175	53,472,654	65,961,283	65,333,593	73,319,149	*
Statutory Programs-Atlantic Offshore	1,255,167,000	1,255,167,000	1,293,425,000	1,328,316,000	795,884,721	795,884,721	684,964,769	*
Subtotal	1,457,088,410	1,457,088,410	1,472,750,291	1,491,462,255	1,028,282,021	1,015,044,711	907,652,423	*
Strategic Outcome 2: Natural Resource Sectors and Consumers are Environmentally Responsible								
Energy-efficient Practices & Lower-carbon Energy Sources	444,317,619	444,317,619	464,018,045	255,596,149	430,276,325	314,652,883	342,424,547	**
Technology Innovation	265,761,737	265,761,737	150,090,774	122,495,639	235,868,140	155,738,548	152,200,348	**
Responsible Natural Resource Management	341,051,255	341,051,255	179,373,009	181,701,711	330,109,153	282,047,031	236,874,939	**
Subtotal	1,051,130,611	1,051,130,611	793,481,828	559,793,499	996,253,618	752,438,462	731,499,834	**
Strategic Outcome 3: Canadians have information to Manage their Lands and Natural Resources, and are Protected from Related Risks								
Protection for Canadians and Natural Resources	58,484,119	59,202,413	55,878,528	52,950,476	66,418,340	65,535,095	55,604,146	***
Landmass Information	44,500,738	44,500,738	53,620,414	45,306,771	83,852,111	73,828,231	90,961,341	***
Subtotal	102,984,857	103,703,151	109,498,941	98,257,247	150,270,451	139,363,326	146,565,487	***
Internal Services Subtotal	155,810,360	155,861,957	158,919,551	140,907,322	198,477,192	184,198,094	181,093,220	251,745,618
Total	2,767,014,238	2,767,784,129	2,534,650,611	2,290,420,322	2,373,283,282	2,091,044,593	1,966,810,964	3,352,172,605

* NRCan changed its PAA from 2011-12 to 2012-13. Actual Spending for 2011-12 reflects that year's PAA structure, for which there were two program activities under Strategic Outcome 1: 1.1 Economic Opportunities for Natural Resources (actual spending for 2011-12 of $1,439,492,491, which includes the Statutory Programs related to the Atlantic Offshore, with actual spending for 2011-12 of $1,222,730,140), and 1.2 Natural Resource-based Communities (actual spending for 2011-12 of $23,288).

** NRCan changed its PAA from 2011-12 to 2012-13. Actual Spending for 2011-12 reflects that year's PAA structure, for which there were two program activities under Strategic Outcome 2: 2.1 Clean Energy (actual spending for 2011-12 of $1,323,313,646) and 2.2 Ecosystem Risk Management (actual spending for 2011-12 of $199,083,001).

*** NRCan changed its PAA from 2011-12 to 2012-13. Actual Spending for 2011-12 reflects that year's PAA structure, for which there were three program activities under Strategic Outcome 3: 3.1 Adapting to a Changing Climate and Hazard Risk Management (actual spending for 2011-12 of $50,834,868), 3.2 Natural Resources and Landmass Knowledge and Systems (actual spending for 2011-12 of $87,235,443) and 3.3 Geomatics Canada Revolving Fund (actual spending for 2011-12 of $444,250).

NRCan's Planned Spending of $2.768 billion was adjusted during the year to $2.373 billion to reflect changes in authorities granted in Budget 2013 and adjustments to statutory items. The overall reduction of $395 million is explained by a combination of increases and decreases.

Increases included funding for the Government Advertising Campaign, the Stakeholder Engagement and Outreach Campaign, the Restructuring of Atomic Energy of Canada Limited's Nuclear Laboratories, Geo-Mapping for Energy and Minerals, United Nations Convention on the Law of the Sea (UNCLOS), Port Hope Area Initiative, transfer from the Department of National Defence for the Canadian Armed Forces Arctic Training Centre, the operating budget and capital budget carry forward, and collective bargaining.

Decreases included transfers to other departments, a reduction to the Clean Energy Fund (CEF), payments to the Newfoundland Offshore Petroleum Resource Revenue Fund (which were lower than initially forecasted due to decreases in production resulting from the shutdown of oil platforms), and payments to the Nova Scotia Offshore Revenue Account (which were lower due to decreases in production resulting from depressed natural gas prices and reduction in operating capacity).

NRCan's Actual Spending of $2.091 billion compared to total authorities of $2.373 billion resulted in a lapse of $282 million, primarily due to lapses in the Grants and Contributions vote pertaining to the ecoENERGY for Biofuels program, the Grant to Sustainable Development Technology Canada, ecoENERGY Renewable Power (all resulting from claims being lower than allowed in the contribution agreements), Investments in Forest Industry Transformation program (as a result of a contribution agreement not being signed), as well as amounts frozen for the CEF, the Advertising Campaign, the transfer to Shared Services Canada, and the conversion factor (converting operating dollars into salary dollars), the reprofile of funding to future years for the Gunnar and Lorado Mine, the Port Hope Area Initiative, the Stakeholder Engagement and Outreach Campaign, and Incremental Land Claims, and a lapse in the Operating vote for the Port Hope Area Initiative, for which NRCan will seek a reprofile.

Alignment of Spending With the Whole-of-Government Framework

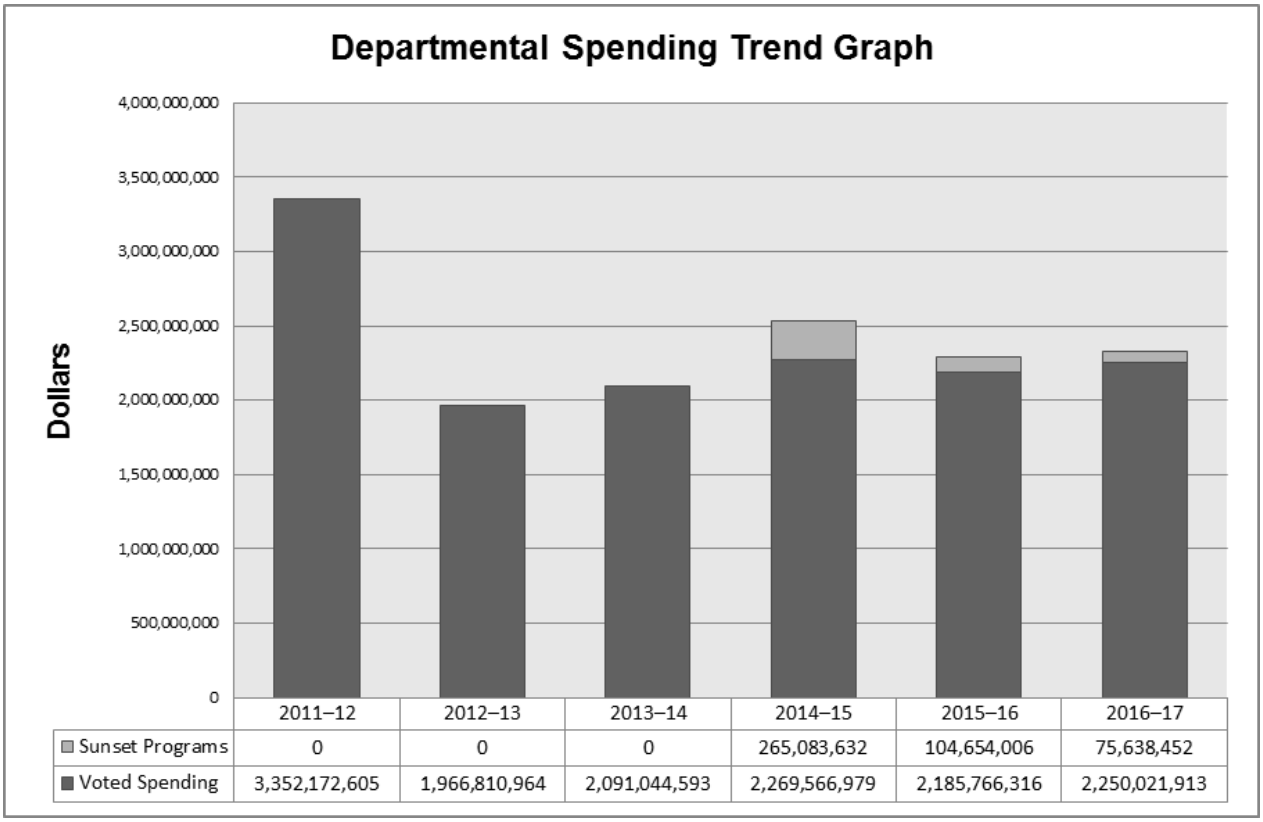
Alignment of 2013–14 Actual Spending With the Whole-of-Government Framework[xi] (dollars)

Strategic Outcome	Program	Spending Area	Government of Canada Outcome	2013-14 Actual Spending
1 Canada's Natural Resource Sectors are Globally Competitive	1.1 Market Access and Diversification	Economic Affairs	Strong Economic Growth	59,733,334
	1.2 Innovation for New Products and Processes	Economic Affairs	Strong Economic Growth	94,093,063
	1.3 Investment in Natural Resource Sectors	Economic Affairs	Strong Economic Growth	65,333,593
	1.4 Statutory Programs- Atlantic Offshore	Economic Affairs	Strong Economic Growth	795,884,721
2 Natural Resource Sectors and Consumers are Environmentally Responsible	2.1 Energy-efficient Practices & Lower-carbon Energy Sources	Economic Affairs	A Clean and Healthy Environment	314,652,883
	2.2 Technology Innovation	Economic Affairs	A Clean and Healthy Environment	155,738,548
	2.3 Responsible Natural Resource Management	Economic Affairs	A Clean and Healthy Environment	282,047,031
3 Canadians have information to Manage their Lands and Natural Resources, and are Protected from Related Risks	3.1 Protection for Canadians and Natural Resources	Social Affairs	A Safe and Secure Canada	65,535,095
	3.2 Landmass Information	Social Affairs	A Safe and Secure Canada	73,828,231

Total Spending by Spending Area (dollars)

Spending Area	Total Planned Spending	Total Actual Spending
Economic Affairs	2,508,219,021	1,767,483,173
Social Affairs	103,703,151	139,363,326
International Affairs		
Government Affairs		

Departmental Spending Trend



For fiscal years 2011-12, 2012-13 and 2013-14, the figures represent the actual expenditures as reported in the Public Accounts.

NRCan's spending profile shows a drop in expenditures after fiscal year 2011-12 as a result of sunsetting funding for Canada's Economic Action Plan initiatives, specifically the Pulp and Paper Green Transformation Program, the ecoENERGY Retrofit – Homes Grant Program, and the ecoENERGY Technology Initiative. In addition to the sunsetting funding, there is a

significant reduction to the statutory payments for the Atlantic Offshore Accords from 2011-12 to 2013-14.

For the period 2014-15 to 2016-17, the figures represent the total planned spending for the fiscal year, which reflects approved funding by Treasury Board to support the departmental strategic outcomes. The sunset amounts represent programs that are set to expire in that fiscal year, irrespective of a planned renewal. In 2014-15, a large portion ($195M) of the sunsetting programs is related to the Nuclear Legacy Liabilities Program. While total planned spending from 2014-15 to 2016-17 remains steady, the statutory planned spending for the Atlantic Offshore Accords increases from 2013-14 to 2016-17 and appropriated planned spending for sunset programs declines, effectively offsetting each other.

Major initiatives sunsetting in 2014-15 include:

- Nuclear Legacy Liabilities Program;
- Renewable Fuels – Conditional Grant to Sustainable Development Technology Canada; and
- Stakeholder Engagement and Outreach Campaign.

Major initiatives sunsetting in 2015-16 include:

- ecoENERGY Innovation Initiative; and
- ecoENERGY Efficiency.

Major initiatives sunsetting in 2016-17 include:

- Forest Innovation and Expanding Market Opportunities;
- ecoENERGY for Biofuels; and
- Wind Power Production Incentive.

Estimates by Vote

For information on Natural Resources Canada's organizational Votes and statutory expenditures, consult the *Public Accounts of Canada 2014*[xii] on the Public Works and Government Services Canada website.

Section II: Analysis of Program(s) by Strategic Outcome

This section provides information on programs that are critical to the realization of NRCan's strategic outcomes and priorities for 2014-15.

More information about these programs and initiatives, as well as supporting evidence from internal evaluations and audit reports, can be found on NRCan's website[xiii].

Strategic Outcome 1: Canada's Natural Resource Sectors are Globally Competitive

Description

Canada is a major producer and exporter of natural resources. Being competitive in Canadian and foreign markets is imperative to the nation's economic growth. The objective of this Strategic Outcome is to help Canada's natural resource sectors become more globally competitive by adapting to the continuously changing conditions of success. This will be achieved by supporting the natural resource sectors to expand and diversify their markets to respond to the high demand from emerging economies, and diversify their product offerings to remain innovative and competitive.

Performance Measurement

Performance Indicators	Targets	Actual Results
Canada's rank in trade as measured by Canada's Trade Performance Index (TPI) for wood, wood products and paper relative to all nations; units are rank position	Favourable-10 year trend, 2005-2014	Canada's share in the world market for wood, wood products and paper increased by 0.3% to 7.8% in 2012. However, Canada's ranking relative to other countries decreased between 2007 and 2012 with respect to these products. The economic situation in the United States, which is the number one destination for Canadian wood products and where GDP growth averaged only 2.2% during that period, led to a reduction of wood product exports and explains the relative decline of Canada's performance. Source: International Trade Centre of United Nations Conference on Trade and Development/World Trade Organization.

Canada's rank in trade as measured by Trade Performance Index (TPI) for minerals (includes energy and power) relative to all nations; units are rank position	Favourable-10 year trend, 2005-2014	Canada's share of the world market for minerals, energy and power decreased to 3.6%, from 4.2% between 2009 and 2012. This decline resulted from the emergence of China and other fast-growing Asian countries as natural resource suppliers. Source: International Trade Centre of United Nations Conference on Trade and Development/World Trade Organization.

Program 1.1: Market Access and Diversification

Description

Canada's natural resource sectors face two key barriers to market access and diversification: 1) trade and policy barriers and 2) lack of awareness of Canada's natural resource products. The objectives of this Program are to breakdown those barriers and support natural resource markets by making information available to Canadians, supporting negotiations to reduce trade barriers, and ensuring that regulations are up-to-date. This helps maintain natural resource sectors' access to existing markets and increases their access to new market segments.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
44,912,875	44,912,875	61,396,582	59,733,334	14,820,459

The difference between Planned Spending and Actual Spending is mainly attributed to the funding received through Supplementary Estimates related to Atomic Energy of Canada Limited Restructuring, Stakeholder Engagement and Outreach Campaign to Build Prosperity for Canada and transfers from the Department of National Defence, as well as the operating budget carry forward and spending related to collective bargaining increases. In addition, spending originally planned for program 2.1 Energy-Efficient Practices and Lower-Carbon Energy Sources was re-directed to program 1.1 Market Access and Diversification. Furthermore, costs recoverable from Treasury Board[2] and salary pressures have increased actual spending. Offsetting these increases slightly are expenditures that were originally planned for program 1.1 Market Access and Diversification that were subsequently spent in program 1.3 Investment in Natural Resource Sectors. In addition, spending originally planned for program 1.1 Market Access and Diversification was subsequently spent in Internal Services.

[2] Costs recoverable from Treasury Board include parental benefits, severance pay, and vacation credits payable upon termination. As authority is provided to the department to make these payments during the year, they are not included in the planned spending.

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
233	255	22

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Natural resource sectors have increased access to existing markets	Natural resource sectors have access to markets as defined by exports of energy products, mineral and metal products and forest products	Favourable 10 year trend by March 31, 2014	In 2013 (the most recent data available), Canada's share of the US' natural resource imports was 25.6%. Canada's share of global natural resource imports was 4.4%.
Natural resource sectors have increased access to new market segments	Dollar value of Canadian Direct Investment Abroad (CDIA) as a measure of investment in and, thus access to foreign markets	Favourable 10 year trend by March 31, 2014	CDIA has increased by 147% in the natural resources sector, from $73 billion in 2003 to $180.4 billion in 2013.
	Natural resource sectors have access to new market segments as defined by exports of energy products, mineral and metal products and forest products	Canada’s baselines for imports to China and India, respectively, are 1.44% and 0.45% (2004-2013)	In 2013 (the most recent data available), Canada's share of China's natural resource imports was 1.5%. Canada's share of India's natural resource imports was 0.5%.

Performance Analysis and Lessons Learned

Increasing market access for Canadian natural resource exports is necessary for maintaining and enhancing Canada’s prosperity. NRCan helped increase market access for Canadian energy, mineral and metal, and forest products through a number of activities, such as increasing awareness among Canadian companies of mineral exploration opportunities, diversifying markets for forest products, reducing regulatory barriers for energy exports and pipelines, and delivering timely regulatory reviews for export licences and pipeline projects. These activities supported performance results at the program level, which show that Canada’s share of the United States’ and global natural resource imports were 25.6% and 4.4%, respectively, while the value of Canadian direct investment abroad increased by 147% between 2003 and 2013, from $73 billion to $180.4 billion.

Sub-Program 1.1.1: Mineral and Metal Markets Access and Development

Description

Canadian mineral and metal producers require access to export markets. Domestic production exceeds domestic demand for many commodities, so tariffs and non-tariff barriers can constrain output. Returns to producers and government revenues can also be reduced by either policies or measures that reduce demand for minerals, metals and products containing metals or certification schemes that discriminate against Canadian producers. This Sub-program administers the *Export and Import of Rough Diamonds Act* and regulations that implement Canada's international obligations under the Kimberley Process Certification Scheme and ensure market access for Canadian diamond producers and users.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
1,719,932	473,325	(1,246,607)

The difference between Planned Spending and Actual Spending is mainly attributed to the expenditures that were originally planned for sub-program 1.1.1 Mineral and Metal Markets Access and Development that were subsequently spent in sub-program 1.3.1 Mineral Investment.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
2	3	1

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Businesses have increased opportunities for trade in goods and services to export markets related to minerals and metals	Mineral and metal exports as a percentage of mineral and metal production value (including coal exports and production from imported feeds)	Stable or growing by March 31, 2014	Mineral and metal exports as a percentage of mineral and metal production value (including coal and excluding aluminum, iron and steel) increased and exceeded the level reached in any of the ten prior years (2003 to 2012).

Performance Analysis and Lessons Learned

In 2013-14, NRCan's efforts helped position the minerals and metals sector in Canada to seize export opportunities, particularly to faster-growing markets in Asia. For example, the Department rapidly and securely issued Canadian Kimberley Process export certificates to ensure that only non-conflict diamonds entered the marketplace. In so doing, NRCan has enabled the Canadian diamond industry to reach international markets and reap economic benefits for Canadians. All told, as a percentage of mineral and metal production value (including coal but excluding aluminum, iron and steel), exports increased and exceeded the level reached in any of the ten prior years (2003 to 2012).

NRCan also positioned the minerals and metals sector for future growth opportunities by completing criticality assessments for rare earth elements and four other metals, antimony, cobalt, lithium and tungsten.

Sub-Program 1.1.2: Forest Products Market Access and Development

Description

Canada's forest sector relies heavily on a single market (the United States) for exports of commodity forest products (mainly wood used in residential construction). But in the face of growing global competition, it can no longer rely solely on traditional markets and/or traditional end-uses of products to remain competitive. Canada must develop opportunities for new forest products and end-uses in existing markets, and diversify markets to expand sales. It must also reduce barriers to market access posed by trade restrictions, tariffs, regulations as well as misconceptions of the strong environmental record of Canada's forest sector and its products. Through this Sub-program, Natural Resources Canada provides financial contributions to Canadian forest industry associations to support initiatives aimed at expanding exports to international markets and increasing the use of wood in North American non-residential construction. It also provides financial contributions and science-based information to industry partners to support the development and dissemination of information products aimed at promoting the environmental reputation of Canada's forest sector in international markets. This Sub-program also provides expertise to other federal departments in support of Canada's international negotiating positions on key trade and environmental issues, and analysis that influences policy decisions on key competitiveness opportunities. This Sub-program includes Expanding Market Opportunities Program and International Climate Change and Clean Energy Dialogue.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
24,108,068	24,696,628	588,560

The difference between Planned Spending and Actual Spending is mainly attributed to costs recoverable from Treasury Board. In addition, funding related to the operating budget carry forward and spending related to collective bargaining increases contributed to the variance.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
72	81	9

The difference between Planned FTEs and Actual FTEs relates to a shift in priorities.

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Forest industry has increased sales of Canadian wood products in international markets	Diversity of markets for Canadian wood products Measure: Using the change in the values of the Herfindahl Index to measure Canada's success in diversifying its wood product exports away from one core market (i.e., the United States) and towards offshore markets over time	Favourable yearly average relative to Herfindhal Index value of 0.397 in 2011 base year. The closer the value is to 0, the more a country (i.e., Canada) has diversified its exports away from dependency on one key market	The diversification of Canada's export markets for wood products has increased significantly between 2007 and 2013 as measured by the Herfindahl Index. The index fell to 0.468 in 2013, which means Canada diversified its exports away from a single market. However, with the resurgence of the US economy, the volume and value of Canadian wood product exports to this market have outpaced increases in other markets, resulting in an upward shift on the Index reading which can be perceived as a negative trend against the 2011 Index value. Between 2012 and 2013, the Index reading increased by 1.7%.

Forest industry has increased sales of Canadian wood products in international markets	Dollar value of wood product sales in targeted offshore markets (China, Korea, Japan and Europe (EU 27)) and other new emerging markets (e.g., India, Middle East)	10% increase over 2011 base year value of $3.1 billion for targeted offshore markets and $99.3 million for new emerging markets	In 2013, Canadian wood product exports to offshore markets totalled $3.7 billion, representing an increase of 27.2%, compared to 2012 and 20% above the 2011 value. In 2013, wood product exports to targeted new emerging markets totalled $85.6 million; representing a decline of 0.6% compared to 2012 and a decline of 13.9% compared to 2011. Among the contributing factors for this decline are the depreciation of the Indian Rupee and the slowdown of construction activity in the Middle East in 2012 and the first half of 2013.
Forest industry has increased sales of Canadian wood products in new market segments	Dollar value of wood products used in non-residential construction projects built with wood as opposed to traditional means (Canada and US)	10% increase in dollar value relative to base year value in 2011 ($130.3 million)	In 2013-14, NRCan helped influence 323 projects representing $146.7 million of new wood sales, 12.6% higher than the level achieved in 2011.
Stakeholders in targeted international markets have positive perception of Canadian forest practices and products	Percentage of targeted stakeholders who have a positive perception of Canadian forest practices and products	Majority (51%) of targeted stakeholders have positive perceptions	A third party study conducted in early 2014 revealed that 71% of international stakeholders contacted felt Canada's environmental practices were better than average. As well 75% agreed Canada (and products produced) had a strong forest management reputation.

Performance Analysis and Lessons Learned

NRCan has played a role in diversifying markets for Canadian wood products, thereby introducing resilience into the business model of manufacturers. Canadian exports to current

offshore markets (China, Japan, Korea and Europe) continued to grow, and in-roads were made in targeted emerging markets (India and the Middle East); meanwhile, Canadian exports to the US increased in the past year as this market rebounds and strengthens.

While external factors—including the depreciation of the Indian Rupee, slowdown in construction in the Middle East, market barriers, and a sluggish American economic recovery—have slowed Canada's diversification of wood and wood product export destinations, NRCan has worked to help the sector overcome these factors. Specifically, NRCan has conducted market studies to identify niche wood markets (e.g., cabinetry, high-end furniture) where Canadian forest products can meet local demands. This is particularly important in regions such as India and the Middle East where market development is in its nascent stage and a variety of social and economic factors can delay or impede Canada's foothold in these regions.

In 2013-14, NRCan supported Canada's forest sector by helping to shape North American perception of Canadian wood as an environmentally sustainable and structurally sound choice of building material. Specifically, NRCan helped influence 323 non-residential and mid-rise projects, representing $146.7 million of new wood sales for non-traditional building construction, 12.6% higher than the target level achieved in 2011.

Sub-Program 1.1.3: Energy Market Regulation and Information

Description

Canada realizes many advantages as a result of robust energy markets and strong trade in energy resources. Ensuring these benefits continue to contribute to the broader economy requires regular assessment, analysis and monitoring of Canadian energy resources, including infrastructure and regulations. This Sub-program aims to foster a competitive Canadian energy sector by working with provinces and territories, and internationally, to articulate Canada's approach to the management of energy resources. To achieve this goal, this Sub-program assesses and updates (when necessary) federal energy regulations and policies (e.g. offshore oil and gas, pipelines, nuclear, etc.), engages domestically and internationally on energy issues, and provides Canadians with information on energy markets.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
19,084,875	34,563,381	15,478,506

The difference between Planned Spending and Actual Spending is mainly attributed to the funding received through Supplementary Estimates related to Atomic Energy of Canada Limited Restructuring, Stakeholder Engagement and Outreach Campaign to Build Prosperity for Canada and transfers from the Department of National Defence, as well as the operating budget carry forward and spending related to collective bargaining increases. In addition, spending originally planned for sub-program 2.1.2 Support for Clean Energy Decision-making was re-directed to sub-program 1.1.3 Energy Market Regulation and Information. Furthermore, costs recoverable from Treasury Board and salary pressures have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
159	170	11

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Greater collaboration between federal, provincial, territorial governments on energy issues	Percentage of priorities, as identified by Energy Ministers completed on time	100% by end of summer 2014	100% complete. During the 2013 Energy and Mines Ministers' Conference, ministers discussed North America's changing energy landscape and the current challenges and opportunities for Canada, focusing on the major themes of energy supply and its safe, secure and efficient distribution and use. Three energy reports and an infographic were released at this meeting, and an online information resource for stakeholders was launched.
Public and other stakeholders - both domestic and international - have access to information about Canada's energy resource markets and	Number of website hits and requests for publications	Maintain level of website traffic and publication requests	Web tracking indicates that user interest remains high from the previous year, with approximately 35,000 web hits to specific pages from July 1, 2013* to March 31,

regulations			2014. *The NRCan website underwent significant upgrades in the last year, and a different traffic monitoring software was implemented. As a result, traffic data were available only as of July 1, 2013.
The Government of Canada's regulatory framework governing Canada's energy resources (e.g. pipelines, frontier lands and offshore oil and gas) is renewed and continuously improved	Assessment and/or update to energy regulations and/or Canada's energy regulatory framework	1, ongoing	NRCan provided support to several Treasury Board submissions related to energy regulations, worked to strengthen the pipeline safety regime, the national nuclear liability regime and offshore regulatory initiatives.

Performance Analysis and Lessons Learned

In 2013-14, NRCan collaborated with provincial and territorial governments to identify and manage opportunities and risks facing Canada's energy sector in support of maintaining supply and safe, secure and efficient distribution. The Department also shared information with domestic and international stakeholders about Canada's energy markets and regulations.

Domestically, NRCan provided policy leadership to put in place world-class safety and security systems to deliver its energy resources to market, including related to the NEB's work on onshore pipeline regulations and monetary penalties. The Department also played a key role in ensuring that Canada's pipeline regulatory regime focused on preparedness, prevention, response, liability and compensation. As well, NRCan worked to modernize the regulatory framework governing Canada's frontier and offshore oil and gas sector. NRCan also facilitated predictable and timely regulatory reviews of oil and gas pipeline projects and export licences, as well as the appointment process for pipeline arbitrators and negotiators.

NRCan continued to engage with its energy partners, including through strengthening Canada's bilateral engagement with the United States. This was accomplished via multiple ministerial trips to Washington and New York, where the Minister emphasized the importance of the Canada-US energy relationship including trade and investment advantages and opportunities. NRCan also supported the Canada-Mexico relationship by sharing information on Canada's renewed regulatory system and partnership opportunities, particularly in unconventional gas and oil. Beyond North America, NRCan was instrumental in promoting Canada as a responsible resource developer across Europe and in Israel, and it continued to engage multilaterally through bodies

such as the International Energy Agency (IEA) and Asia-Pacific Economic Cooperation. At the World Energy Congress, NRCan supported Canada's strengthening of energy cooperation with Japan. NRCan also worked with its Indian counterparts to promote energy trade and investment ties between Canada and India. Furthermore, NRCan addressed market access challenges resulting from the Fuel Quality Directive and California's Low Carbon Fuel Standard. Finally, NRCan provided energy data and information to support the Minister and NRCan officials in delivering various speeches and responses to letters from citizens and media inquiries.

In collaboration with Public Works and Government Services Canada, Justice Canada and Atomic Energy of Canada Limited (AECL), NRCan launched a process to procure the services of a private-sector contractor to manage and operate AECL's Nuclear Laboratories under a Government-owned, Contractor-operated model. The procurement process is anchored in the principles of smart procurement, with a view to ensuring fairness, transparency and ongoing industry consultations. The objective of this restructuring is to create value and reduce risks and costs for taxpayers while continuing to fulfill AECL's core mandate – that is, assume the Government's waste and decommissioning responsibilities; provide nuclear expertise to support federal responsibilities; and offer services to users of the Laboratories on commercial terms.

NRCan maintains a website on petroleum product prices and a bi-weekly Fuel Focus report. The purpose of the website is to better communicate with the public about the state of the market, the economic drivers influencing prices and alleviate concerns about the level and volatility of petroleum product prices such as gasoline, diesel and furnace oil. NRCan also published frequently asked questions and answers about pipelines and other pipeline facts on its website to provide information on the need for pipelines, pipeline safety and environmental protection, and the regulation of pipelines in Canada, including arbitration and negotiation services.

Program 1.2: Innovation for New Products and Processes

Description

Optimizing the use of Canada's natural resources and the processes by which they are developed would improve the productivity of the natural resources sectors and reduce its dependency on the sale of traditional natural resource products. The objective of this Program is twofold: to maximize the productivity and to decrease our dependency on the sale of traditional products by encouraging natural resources sectors to adopt new technologies and processes to develop new products. This objective is achieved by conducting science, research, development, and demonstrations on new applications, technologies, processes, and products.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
102,524,720	102,524,720	105,039,435	94,093,063	(8,431,657)

The difference between Planned Spending and Actual Spending is mainly attributed to the return of funds from the Investments in Forest Industry Transformation Program to the fiscal framework due to the withdrawal of a large-scale project at the end of the fiscal year. In addition, the Forest Innovation Program had several planned research projects that were not implemented due to a delay in developing a Government of Canada approach in support of the industrial bio refinery capabilities in the Canadian forest sector. As well, spending that was originally planned for program 1.2 Innovation for New Products and Processes was subsequently spent in Internal Services. Slightly offsetting these surpluses are costs recoverable from Treasury Board and expenditures that were originally planned for program 2.3 Responsible Natural Resource Management that were subsequently spent in program 1.2 Innovation for New Products and Processes. In addition, funding related to the operating budget carry forward and spending related to collective bargaining increases contributed to the variance.

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
279	303	24

The difference between Planned FTEs and Actual FTEs relates to changes during the year which allocated more FTEs to this program from various other programs, not appearing in the planned FTE amount.

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Natural resource sectors increase production of new products and processes	Number of new products and processes resulting from NRCan information	5 by March 31, 2014	NRCan met its target. For example, a new process to determine sustainable forest biomass removal rates in Canadian forests by looking at biological indicators (biodiversity) was developed as were best practices for establishing forest inventories through the use of lasers (LiDAR).
	Research and Development (R&D) expenditures in natural resource sectors as defined by total intramural R&D expenditures in energy, mining and forestry sectors	Favourable 10-year trend, 2005-2014	R&D expenditures in the natural resource sectors experienced a positive upward trend from 2004 to 2006. R&D expenditures remained fairly stable until experiencing a decrease in 2013. Overall, the level of intramural

			expenditures from business and the federal government in the natural resource sectors increased by around 20% between 2004 and 2013, compared to an increase of approximately 5% for the total economy.
Public and private sector organizations in the natural resource sectors have increased either cost-efficiency or productivity	Number of citations of either cost-efficiency or productivity gains in public or private sector organizations	5 by March 31, 2014	NRCan met this target. The Canadian Space Agency, for example, uses NRCan data for the safe launching of stratospheric balloons. Private sector strategic analysis companies have also indicated that NRCan's data extraction tools will greatly facilitate the production of their market analyses.

Performance Analysis and Lessons Learned

Innovation plays a key role in supporting the competitiveness of Canada's natural resource exports. In 2013-14, NRCan undertook targeted efforts at the sub-program level to foster innovation in mining, forestry and geomatics. In particular, the Department provided expertise to industry stakeholders in these areas. Results at the program level indicate that the expertise provided by NRCan was used to develop more than five new products or processes in 2013-14, exceeding the target. NRCan also met the target relating to the number of citations of cost-efficiency and productivity gains in public and private sector organizations. For example, citations were made by Ontario's Ministry of Natural Resources, Hydro Québec, a partnership between the Canadian Space Agency and France's Centre National d'Études Spatiales and private sector companies Space Imaging Systems and Transformit Inc.

Sub-Program 1.2.1: Mining Innovation

Description

Increased innovation is needed to improve the productivity and competitiveness of Canadian mines. Canada's capacity for mining innovation has reached a critical level as a result of declining enrolment in university programs and changes in industry structure. Mining research is fragmented and focused on shorter-term, lower-risk projects to improve existing processes. The time and effort required to develop and commercialize breakthrough technologies and the associated risks are substantially greater. This Sub-program conducts coordinated research to

address priorities identified by stakeholders, including the Canada Mining Innovation Council, industry, academics, technology developers and representatives of provincial and territorial governments. A collaborative approach reduces financial risks for industry partners and ensures that program priorities are aligned with business needs. Examples of higher-risk innovation opportunities that could generate substantial economic benefits within Canada include new technologies to develop and operate safely and profitably deeper mines and to process ores, concentrates and recyclable materials that cannot be processed with commercially available technologies. The Sub-program also a) creates opportunities to develop next-generation professionals to spur innovation and b) supplies standard reference materials to service providers and industry analytical laboratories. Laboratories rely on reference materials to ensure the quality of data that inform mineral investment decisions, determine product value, drive process improvement and improve confidence in environmental monitoring.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
3,526,185	4,624,961	1,098,776

The difference between Planned Spending and Actual Spending is mainly attributed to costs recoverable from Treasury Board and expenditures that were originally planned for sub-program 2.3.4 Radioactive Waste Management that were subsequently spent in sub-program 1.2.1 Mining Innovation. In addition, funding related to the operating budget carry forward and spending related to collective bargaining increases contributed to the variance.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
36	39	3

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Academic, government and other non-industry partners increase financial and in-kind contributions for mining and processing research	Value of financial and in-kind contributions by academic, government and other non-industry partners collaborating with NRCan on mining and processing research	10% increase over 3-year baseline of $500,000 by March 31, 2015	In 2013-14 the value of financial and in-kind contributions was $482,000 and NRCan is on track to meet the target by 2015.
Industry partners increase financial and in-kind contributions for	Value of financial and in-kind contributions by industry partners	10% increase over 3-year base line of $1.8 million by March 31,	In 2013-14 the value of financial and in-kind contributions was

mining and processing research.	collaborating with NRCan on mining and processing research	2015	$1,557,000 and NRCan is on track to meet the target by 2015. This year task-shared projects, such as one with Vale Canada, to advance waste-activated binder technology, have contributed to NRCan being on track to meet this target.
Technology developers increase demonstration of innovative mining and processing technologies	Number of demonstration projects	2 over 5 years, by March 31, 2017	NRCan is on track to meet this target. One demonstration project was completed for the monitoring of hoisting cable. A second demonstration project is planned for 2014-15.

Performance Analysis and Lessons Learned

In 2013-14, a number of demonstration projects and technological expansions were supported by NRCan. The Contiscan wire-rope technology, allowing for the use of synthetic ropes instead of conventional steel ropes, was successfully deployed for routine use at Iamgold's Westwood mine; the technology has been transferred under licence to Meglab for further use. NRCan has continued to conduct research on processes that support the realization of its mineral and metal wealth, including a study on the development of an efficient processing flowsheet for a major Canadian rare earth deposit. The process described in the flowsheet (a key element of pre-feasibility, feasibility and ongoing development of a metallurgical project) is envisaged to require low capital and operating investment yet will allow more than 90 % recovery of rare earth elements and niobium for the particular situation. Its application has been confirmed to be applicable to other deposits with similar geology.

Finally, projects associated with in-situ rock stresses and alternative binders have seen success, although high turnover rates at partners' operations have slowed progress; nonetheless, such demonstration projects remain on track. Further, other projects, such as work with the Geological Survey of Canada on shale gas seismic applications, are progressing on schedule and will contribute to NRCan's meeting its target level of industry contributions for mining and processing research.

The Audit Branch at NRCan undertook an audit of the management of the CanmetMINING laboratory and its revenue generation activities in 2013-14. Through the audit process, and follow-up activities, CanmetMINING has developed best practices on the management of

science based operations; such activities will support developing continued mining innovations and achieving results for Canada's metals and minerals sector.

Sub-Program 1.2.2: Forest Sector Innovation

Description

Canada's forest sector, traditionally the world's largest exporter of forest products, has experienced a decrease in its market share as a result of changing global and regional demand and increasing competition. To regain its competitive position, the sector must focus on innovation (i.e., research, development and deployment) that generates more value from Canada's forests than it did in the past. This will allow the sector to move away from a traditional volume-based commodity focus towards a more diversified mix of higher-value specialized products, processes and technologies that will be innovative and able to compete profitably in a wider array of markets. To accelerate innovation in the forest sector, an integrated national forest sector innovation system is needed to ensure research priorities are aligned and commonly pursued by partners. Through this Sub-program, Natural Resources Canada provides leadership in Canada's forest sector innovation system by bringing governments, industry and research institutions together in a working partnership to focus on collectively identifying, funding, and delivering the innovation priorities of the sector. Natural Resources Canada also conducts research and provides financial contributions to FPInnovations, other forest sector research partners, and eligible forest products companies to research, develop, and deploy new products, processes and technologies. This Sub-program includes Investments in Forest Industry Transformation program, Forest Innovation Program, Genomics Research and Development Initiative, Forest Research Institutes, Canadian Regulatory System for Biotechnology and BC Treaties.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
90,440,886	77,530,586	(12,910,300)

The difference between Planned Spending and Actual Spending is mainly attributed to funds returned by the Investments in Forest Industry Transformation Program to the fiscal framework due to the withdrawal of a large-scale project at the end of the fiscal year. In addition, the Forest Innovation Program had several planned research projects that were not implemented due to a delay in developing a Government of Canada approach in support of the industrial bio refinery capabilities in the Canadian forest sector.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
205	184	(21)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Forest sector innovation is accelerated by the endorsement of an annual research plan by the forest sector innovation system	Annual research plan endorsed by the FPInnovations National Research Advisory Committee (NRAC)	1 endorsed research plan by March 31, 2014	The target was met through the approval in 2013-14 of the FPInnovations research plan.
NRCan, industry, provinces and academia develop higher value Canadian forest products and processes which lead to new technologies to create a better competitive position for the Canadian forest sector	Number of new higher-value Canadian forest products or processes that lead to new technologies produced	10 by March 31, 2014	NRCan met this target through contributing, with stakeholders in the forest sector, to the development of high value products and processes, including advanced papers, environmentally-sustainable adhesives, technical guides for designing tall wood buildings and methodologies for better understanding forest fibre resources.

Performance Analysis and Lessons Learned

Federal funding in support of forest innovation has continued to help Canada's forest sector develop, adapt and commercialize cutting-edge forest products, processes and technologies. To ensure a holistic approach, this funding covers the complete forest sector value chain. Innovations developed based on NRCan’s funding have helped improve the competitiveness of the forest sector, including by broadening the basket of higher-value goods the sector sells into the marketplace; the approval of the FPInnovations research plan will support future innovations contributing to these same outcomes.

While the first iteration of the Investments in Forest Industry Transformation program was slated to sunset on March 31, 2014, Budget 2014 provided $90.4M in additional funding over four years for its continuation, allowing it to support the next wave of forest industry innovation. The

funding renewal followed an evaluation of the program that revealed that it was providing needed support for the forest sector and that the innovation culture is just beginning and still needs to be supported. This suggests that IFIT can continue to fund projects of first-of-a-kind technologies, including integrated biorefineries capable of efficiently converting biomass into high-value bioproducts.

Sub-Program 1.2.3: Geomatics Innovation

Description

The emergence of mass-market distribution systems, such as mobile devices, has dramatically increased the demand and profile of location-based data and technology for users such as government and the private sector. However, such Geographic Information Systems (GIS) and other location-enabled applications are dependent on standardized, up-to-date and accurate location-based information. This Sub-program delivers architecture, standardization and application policies and expertise in order to enable the natural resources sectors to create innovative, value-added applications used for example in the management of forests, determining the slope for pipeline location and elevation modelling used in dam construction. The use of NRCan's location-based knowledge in a wide variety of value-added applications can stimulate economic growth and productivity, enabling these sectors to be more competitive.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
8,557,649	11,937,516	3,379,867

The difference between Planned Spending and Actual Spending is mainly attributed to changes during the year which allocated more funding to this sub-program from various other sub-programs, not appearing in the planned spending amount. In addition, costs recoverable from Treasury Board have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
38	80	42

The difference between Planned FTEs and Actual FTEs relates to changes during the year which allocated more FTEs to this sub-program from various other sub-programs, not appearing in the planned FTE amount.

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Natural resource sectors adopt national or international geospatial policies, standards or frameworks	Number of national frameworks adopted, enhancing pan-Canadian interoperability of geo-applications, tools and data	2 by March 31, 2014	NRCan released three national geospatial datasets, which have been adopted by provincial and federal organizations: the National Railway Network, the National Road Network, and the National Hydrographic Network.

Performance Analysis and Lessons Learned

NRCan continued to demonstrate its geospatial expertise and leadership role within Canada by releasing three national geospatial datasets: the National Railway Network, the National Road Network, and the National Hydrographic Network. These datasets, delivered by NRCan and maintained in partnership with provinces and territories, government agencies, and other stakeholders, will support informed decision-making for policy and economic development in natural resources sectors as well as other sectors of the economy. For example, the new Canada Base Map – Transportation web mapping service has been implemented and is currently used extensively by Passport Canada and Defence Research and Development Canada's Multi-Agency Situational Awareness System.

NRCan's open data portal, GeoGratis, continues to be monitored and reported on regularly using a series of web analysis tools to provide a better understanding of the current consumption of our geospatial datasets, information and web services. The Department has produced client profile analysis and reports on web traffic and visitor behaviour for GeoGratis and two other major portals: GeoBase and National Earth Observation Data Framework. Such analytics will continue to inform NRCan on consumer interests and to plan for future data products, information and services.

Finally, NRCan's phased implementation of the Federal Geospatial Platform (FGP) is on track, with the FGP Secretariat meeting all of its key priorities, including the development of a project charter and implementation plan. These key documents will ensure the FGP supports a high level of interoperability across federal systems, increasing potential for efficiencies and productivity gains. For example, development of the FGP will support Shared Services Canada's data centre consolidation plan, which will result in cost savings and increased physical and cyber security for the Government of Canada.

Program 1.3: Investment in Natural Resource Sectors

Description

Investing in the development of natural resources is costly and risky due to the uncertainties related to the potential economic viability of natural resources. There are many factors to consider when deciding whether or not to develop a natural resource. In some cases, investors and/or companies lack knowledge on and, thus, are unaware of potential opportunities. The objective of this Program is to encourage natural resource sector investment by increasing knowledge of opportunities and thus decreasing the risk of development. This objective is achieved by providing funding and information on the factors that determine the potential economic viability of natural resources.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
54,483,815	54,483,815	65,961,283	65,333,593	10,849,778

The difference between Planned Spending and Actual Spending is mainly attributed to the funding received through Supplementary Estimates related to Geo-Mapping for Energy and Minerals, a transfer from Aboriginal Affairs and Northern Development Canada for the Canada Nunavut GeoScience Office as well as the operating budget carry forward and spending related to collective bargaining increases. In addition, costs recoverable from Treasury Board and in-year transfers from program 2.2 Technology Innovation that are not accounted for in the planned spending related to the Program of Energy Research and Development and the ecoENERGY Innovation Initiative have increased actual spending. Furthermore, expenditures that were originally planned for program 1.1 Market Access and Diversification were subsequently spent in program 1.3 Investment in Natural Resource Sectors. Slightly offsetting these increases is spending originally planned for program 1.3 Investment in Natural Resource Sectors being subsequently spent in Internal Services.

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
432	427	(5)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Natural resource sectors have increased investment	Growth of capital expenditures in the energy sector (average of past 5 years) compared to growth in overall capital expenditures in Canada (average of past 5 years)	The average 5 year growth rate of capital expenditures in the energy sector grows at a rate higher than the average 5 year growth rate in capital expenditures in Canada	The average growth rate for the energy sector is 6.2% compared to the average growth rate for the overall economy, which is 2.7%.
	Growth of capital	The average 5 year	The average growth rate

	expenditures in the forest sector (average of past 5 years) compared to growth in overall capital expenditures in Canada (average of past 5 years)	growth rate of capital expenditures in the forest sector grows at a rate higher than the average 5 year growth rate in capital expenditures in Canada	for the forest sector is – 0.9% which is below the average growth rate of the overall economy, which is 2.7%. However, based on capital expenditure intentions for 2014, the 5-year average could increase to 12.3% for the forest sector next year.
	Growth of capital expenditures in the minerals and metals sector (average of past 5 years) compared to growth in overall capital expenditures in Canada (average of past 5 years)	The average 5 year growth rate of capital expenditures in the mineral and metals sector grows at a rate higher than the average 5 year growth rate in capital expenditures in Canada	The average growth rate for the minerals and metals sector is 8.7% compared to the average growth rate of the overall economy, which is 2.7%.

Performance Analysis and Lessons Learned

Investments in the development of Canada's natural resource sectors are essential for the global competitiveness of exports. NRCan supported investments by helping to address the risks of development while increasing knowledge of potential opportunities. In particular, the Department conducted a number of activities through sub-programs that focused on mineral exploration, forestry and new energy supply. It continued to help improve the regulatory framework for major project reviews through the development and implementation of the Government's plan for Responsible Resource Development. Results at the program level indicate that over the past 5 years, capital expenditures in the energy, forest and minerals and metals sectors grew at an average of 6.2%, – 0.9% and 8.7%, respectively.

Sub-Program 1.3.1: Mineral Investment

Description

Canada must compete for mineral investment because capital is mobile and flows to countries that offer attractive risk-adjusted returns for investors. Mineral exploration creates opportunities for Canadians and can lead to increasing investments and resource rents over the medium-term. To calibrate policies that affect mineral investment, governments need sector-specific information on mineral exploration and mine development activities. Tracking exploration activities is difficult because there are thousands of exploration companies and projects, with new companies being continually created while others become inactive. This Sub-program addresses this information gap by collecting socioeconomic data on mineral exploration, deposit appraisal and mine complex development expenditures, physical output from production

facilities and the value of mineral production and trade. Data is collected under the authority of the Statistics Act, the Resources and Technical Surveys Act and provincial statutes. Results inform policy development, analysis and advice to the Minister and are also used by Statistics Canada, provinces and territories. The program prepares tax rulings for provisions of the Income Tax Act administered by the Minister; provides expertise, analysis and support to other departments with lead responsibility for tax policy, investment policy and promotion and corporate social responsibility; and conducts outreach to global investors.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
9,891,187	11,097,999	1,206,812

The difference between Planned Spending and Actual Spending is mainly attributed to the expenditures that were originally planned for sub-program 1.1.1 Mineral and Metal Markets Access and Development that were subsequently spent in sub-program 1.3.1 Mineral Investment. In addition, funding related to the operating budget carry forward and spending related to collective bargaining increases contributed to the variance. Furthermore, costs recoverable from Treasury Board have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
91	95	4

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Industry decision-makers fund mineral exploration in Canada	Ranking of planned nonferrous base metals exploration spending in Canada by companies reporting an annual budget of at least US$100,000	Third or better in global ranking	Based on data from SNL Metals and Mining, Canada was the top country destination for budgeted non-ferrous exploration expenditures in 2013.

Performance Analysis and Lessons Learned

NRCan has continued to support Canada's status as the top destination for investment in non-ferrous mineral exploration by developing and disseminating key information products, including publications, information bulletins and maps. These data products are showcased on the NRCan website, distributed at mineral investment and other national and international conferences, and shared with a wide range of stakeholders. They highlight key indicators that are

crucial to assess the health of these industries, and identify challenges and opportunities facing different industry segments, such as exploration, and the contributions of these industries to the Canadian economy. While some publications were delayed as a result of new accessibility requirements and resource constraints, the lessons learned will reduce such risks in the future.

NRCan continues to focus on the responsible development of Canada's resources, including promoting Canada's approaches in support of Canadian mining companies operating abroad. NRCan supported the Minister's program at the Annual Conference and Trade Show of the Prospectors and Developers Association of Canada (PDAC) to position Canada and Canadian companies as responsible resource developers. It also contributed to Corporate Social Responsibility (CSR) by supporting a research initiative to study the evolution of CSR in reporting by Canadian companies under securities regulators; the goal of this initiative is to further enhance implementation of CSR by the Canadian mining industry operating abroad. A review of the Government's CSR Strategy is being undertaken by Foreign Affairs, Trade and Development Canada in cooperation with NRCan, which will provide advice on refinements to be made to ensure the Strategy remains relevant and effective.

Sub-Program 1.3.2: Forest-based Community Partnerships

Description

Forest sector restructuring has led to mill closures, capacity reductions and job losses in forest-based communities across the country. However, the transitioning forest sector also represents opportunities for communities to participate in a wide-variety of economic development opportunities. Through its Forest Communities Program and the Aboriginal Forestry Initiative, Natural Resources Canada supports and facilitates community and regional-scale partnership projects and provides financial support to 11 forest-based community partnership organizations and to Aboriginal communities across Canada. The objective is to assist community partnership organizations in developing innovative knowledge products, tools and strategies so that Aboriginal and non-Aboriginal forest-based communities may participate in and benefit from emerging economic opportunities. Projects contribute to capacity building and business development opportunities in areas such as biomass and bioenergy; non-timber forest products; local wood initiatives; forest management; value added wood products; and providing services to government and industry.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
4,645,334	4,268,233	(377,101)

The difference between Planned Spending and Actual Spending is mainly attributed to a shift in priorities.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
33	23	(10)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Forest-based and Aboriginal communities have the knowledge needed to take advantage of emerging economic opportunities	Number of new economic projects facilitated, brokered, and/or developed with NRCan knowledge and funding	15 new projects facilitated, brokered, and/or developed with NRCan knowledge and funding by March 31, 2014	NRCan met this target, as 18 new projects have been approved.
Increased investments by forest-based community partners relative to investments made by NRCan over the duration of the Forest Communities Program	Investments from forest community, industry and government partners exceed investments by NRCan in the Forest Communities Program and Aboriginal Forestry Initiative	Contributions from funded forest community partners exceed NRCan's contribution by 2:1 by March 31, 2014	NRCan exceeded the target, realizing a contribution rate of at least 3:1 overall, with some projects averaging ratios of 7:1 and 8:1.

Performance Analysis and Lessons Learned

Under the Aboriginal Forestry Initiative (AFI), NRCan exceeded its performance target by signing 18 contribution agreements with proponents, some of which were in cooperation with other government departments. The AFI, which allocated more than $2.7 million in G&C funding in 2013-14 yet attracted several times that from community partners, supported projects serving to demonstrate emerging opportunities for Aboriginal entrepreneurs in the forest sector relating to the following: forest management planning, inventories, harvesting, silviculture, reforestation, and forest fuels and fire management to government and industry clients. These projects, while focused on community readiness, will also increase Aboriginal participation and economic development within the natural resource sectors, enhancing business skills and

capacity and developing business planning and business management competencies among Aboriginal entrepreneurs and communities. The Forest Communities Program (FCP), which sunset at the end of 2013-14, achieved similar success in attracting high ratios of private to government funding towards similar ends.

Over the years the FCP and NRCan, in partnership with the Canadian Model Forest Network provided support to numerous forest communities and their industries for improving sustainable forest management practices as well as diversifying local economic activities. The Canadian Model Forest Network remains a valued partner for NRCan in the promotion of responsible resource management across the country. NRCan continues to host the International Model Forest Network Secretariat. The Network has grown to include more than 55 Model Forests in 28 countries.

Sub-Program 1.3.3: Targeted Geoscience Initiative 4 (TGI-4)

Description

Mineral resources are one of the principal economic drivers in many rural and remote Canadian communities but known reserves are depleting. In order to sustain economic viability in these areas, new geoscience knowledge and techniques are required to help industry more effectively explore for buried, as yet undiscovered mineral resources in existing and emerging mining areas. The Targeted Geoscience Initiative 4 is the fourth generation of this initiative that develops our understanding of entire mineral systems and provides industry innovative ways for deep exploration, thereby maximizing yield. This initiative targets selected mineral districts across Canada to provide the best examples of Canada's major ore systems and to develop optimal predictive models and techniques for deep exploration. In turn, this program supports the natural resource sector's access to viable investment opportunities.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
11,888,057	12,410,082	522,025

The difference between Planned Spending and Actual Spending is mainly attributed to the greater contribution of salary expenditures used to support the program as well as costs recoverable from Treasury Board. In addition, funding related to the operating budget carry forward and spending related to collective bargaining increases contributed to an increase in spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
61	62	1

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
By applying NRCan knowledge and/or techniques, industry explores more effectively for as-yet undiscovered resources	Number of attributions of use of NRCan's geoscience knowledge and techniques in exploration strategies resulting in greater exploration effectiveness	12 by March 31, 2014	A survey concluded that 14 out of 19 surveyed industry clients attributed improvements in exploration strategies and effectiveness to the work of Targeted Geoscience Initiative 4 (TGI-4), with the remaining 5 companies stating that TGI-4 work would be integrated into future exploration initiatives. Independent of the survey, two additional private sector firms attributed NRCan's work to their exploration effectiveness.

Performance Analysis and Lessons Learned

NRCan's TGI-4 program continues to influence success in mineral exploration across the country, with 16 firms attributing improvements to their exploration strategies to it. These firms operate across the country, in regions such as Ontario's Ring of Fire, Saskatchewan's Athabasca Basin, and the Bathurst region of New Brunswick.

In a survey of industry, academic and provincial-territorial stakeholders, 70% of respondents indicated that TGI-4 research was relevant and that their own research networks had been strengthened because of it. Sixty-seven percent indicated that new research opportunities had been created. TGI-4 has led to the training of more than 133 students (60% of which are at the post-graduate level) as Highly Qualified Personnel to fill the widely recognized skill shortage in the mineral exploration industry. The evaluation of TGI-4 in 2014 demonstrated that the Program has produced a wide range of planned outputs using sound, science-based project management techniques and tools.

NRCan continued to develop and improve the TGI-4 program through engaging in a dialogue with industry representatives at two major industry conferences; key industry input collected at these venues served as guidance as NRCan continued to refine the kind of support offered by TGI-4 to close critical knowledge gaps in the mineral exploration sector.

Sub-Program 1.3.4: Geo-Mapping for Energy and Minerals

Description

Without the public availability of reliable geological information, industry risks either investing in development in areas with low potential for energy and mineral resources or using inappropriate strategies to develop these resources. These risks can affect Canada's ability to attract investment; therefore, in order to attract investment, accessible and reliable geological information is required. The Geo-mapping for Energy and Minerals (GEM) activities provide industry with modern geological information, facilitating industry's ability to identify areas with potential sources of energy and mineral resources. The activities are focused on updating the geological framework, which identifies the potential areas where certain mineral and energy types could be located, and disseminating this knowledge to all involved stakeholders. This fills the critical information gap in the knowledge base needed to increase exploration investment and facilitate land-use decisions in the territories.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
19,103,631	26,170,942	7,067,311

The difference between Planned Spending and Actual Spending is mainly attributed to the funding received through Supplementary Estimates related to Geo-Mapping for Energy and Minerals, a transfer from Aboriginal Affairs and Northern Development Canada for the Canada Nunavut GeoScience Office as well as the operating budget carry forward and spending related to collective bargaining increases. In addition, costs recoverable from Treasury Board have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
175	180	5

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Governments and industry have increased geoscience information on Canada's North to help guide development decisions	Number of different products accessed (e.g., downloaded) annually on Northern geoscience information	25 by March 31, 2014	In 2013-14, there were nearly 28,000 downloads from more than 750 information products of the Geo-Mapping for Energy and Minerals program.

Performance Analysis and Lessons Learned

The Geo-Mapping for Energy and Minerals program was first launched in 2008 as a five-year, $100 million initiative to significantly advance and modernize geological knowledge in the North. The second iteration of this program, GEM-2, was announced by Prime Minister Harper on August 22, 2013, with renewed funding of $100 million over seven years to complete modern, regional scale geological maps and data sets for Canada's North; GEM-2 exceeded its stated information dissemination targets in 2013-14, and will continue to improve public understanding of resource potential in the North through the regular release of new geological knowledge over the next seven years. Building on the recommendations yielded by an audit of GEM-1, GEM-2 is positioned to provide enhanced knowledge products to optimize investments in the North to benefit Northerners through enhanced economic opportunities and jobs.

Sub-Program 1.3.5: New Energy Supply

Description

The development of new sources of energy is pivotal in addressing Canada's long-term energy requirements due to increased energy use and the global decline in conventional energy resources. These new sources will support the energy supply mix necessary for sustainable long-term economic growth in Canada. However there is a current lack of geoscience information to enable the private sector to make investment decisions. This Sub-program provides strategic assessments, methodologies and information required to make investment decisions on the offshore and other viable renewable resources such as gas hydrates, shale gas, geothermal and tidal energy supplies that could become an important component of Canada's future energy mix.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
5,166,148	6,593,043	1,426,895

The difference between Planned Spending and Actual Spending is mainly attributed to in-year transfers from sub-program 2.2.3 Clean Energy Science and Technology that are not accounted for in the planned spending related to the Program of Energy Research and Development and the ecoENERGY Innovation Initiative. In addition, funding related to the operating budget carry forward and spending related to collective bargaining increases contributed to the variance. Furthermore, costs recoverable from Treasury Board have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
47	40	(7)

The difference between Planned FTEs and Actual FTEs relates to continued efforts to reduce personnel through attrition, as well as redirection to other priorities over the course of the year.

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
The private sector has access to reports such as strategic assessments on offshore and new energy supply to help inform investment decision-making	Number of different reports, such as strategic assessments, accessed (e.g., downloaded) annually by stakeholders	5 by March 31, 2014	More than 30 New Energy Supply publications were downloaded more than 1,000 times in 2013-14, with several more publications being downloaded more than 250 times.

Performance Analysis and Lessons Learned

NRCan's New Energy Supply sub-program continued to support Canada's energy sector on long-term investment decisions, as evidenced by the number of strategic assessments and reports provided to firms on the viability of new energy sources. Research results were communicated directly in more than 15 formal presentations to industry. By providing publicly-accessible and leading-edge research through reports, resource assessments and presentations, NRCan influenced and informed decisions by the energy industry. For example, NRCan's analysis identified a new, potentially significant shale source rock in the Liard Basin in the eastern Canadian Cordillera. Also, two new energy resource assessments were completed on the Utica Shale (Quebec) and Eagle Plain (Yukon) and have been published. Methodologies developed and made available through the sub-program are also presently being applied in conjunction with provincial agencies in studies in three different mature basin settings Duvernay (Alberta), Horn

River (British Columbia), and Bakken (Saskatchewan) as well as in the aforementioned, frontier basin, Utica.

Sub-Program 1.3.6: Major Projects Management Office Initiative

Description

Major resource projects represent significant economic investments, creating thousands of jobs and providing important economic development opportunities for communities across Canada. More than $650 Billion is expected to be invested in over 600 major economic projects across Canada over the next 10 years. Efficient and effective federal project reviews are needed to facilitate this investment and capitalize on the potential to stimulate jobs and growth through responsible resource development, while also maintaining strong environmental protection. The objective of the Major Projects Management Office/Initiative is to support timely and effective project reviews and to lead Government-wide efforts to modernize the regulatory system for major projects. This includes efforts to improve the alignment of federal and provincial regulatory processes and to ensure effective and meaningful consultation with Aboriginal people.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
3,789,458	4,793,294	1,003,836

The difference between Planned Spending and Actual Spending is attributed to the Major Projects Management Office role in supporting the Strategic Projects Secretariat and the Special Federal Representative on West Coast Energy Infrastructure. These two programs had not been included in planned spending at the beginning of the year. In addition, costs recoverable from Treasury Board have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
26	27	1

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Regulatory reviews of major projects are completed in a predictable manner	Predictable: Percentage of major resource project reviews that meet their Project Agreement milestones	80%, ongoing	As of March 31, 2014, 89% of current major resource project reviews were within 8 weeks or less of their target timeline, which

			represents the collective performance of multiple departments and agencies in meeting their service standards and target timelines for project reviews.
Regulatory reviews of major projects are completed in a timely manner	Timeliness: Average review time of completed MPMO projects	Less than 2 years, ongoing	The average review time of the 15 completed MPMO projects is 1.3 years (67.1 weeks). As of March 31, 2014, the 28 projects that commenced a review under the *Canadian Environmental Assessment Act, 2012* are on track to meet target timelines.
System-wide improvement of the federal regulatory process for major project reviews	Legislative, regulatory and policy improvements advanced through the MPMO Initiative	Continuous improvement	As of March 31, 2014, 11 Responsible Resource Development regulations have been published in the *Canada Gazette*, Part II. With support from its federal partners, NRCan's MPMO continues to drive ongoing system-wide improvements to the regulatory system for major resource projects in Canada.

Performance Analysis and Lessons Learned

NRCan and its federal partners continued to advance fundamental improvements to the regulatory system for major resource projects through implementation of the Government's plan for Responsible Resource Development (RRD), a key component of recent federal budgets. The plan has four key objectives that it is delivering on: making the review process for major projects more predictable and timely; reducing duplication in the review process; strengthening environmental protection; and enhancing consultation with Aboriginal peoples. Since launching RRD, the MPMO and its federal partners have almost fully completed a package of legislative and regulatory reforms, which have improved the conditions for achieving RRD's objectives. The MPMO continues to work on fully implementing these reforms, while driving ongoing system-wide improvements to the regulatory system for major resource projects in Canada.

The work being accomplished by the MPMO is significant in modernizing Canada's regulatory system for major resource projects. The MPMO's activities have enhanced market access and the investment climate for Canada's natural resource sectors while strengthening environmental protection and enhancing Aboriginal engagement and consultation. As of March 2014, the MPMO managed the federal regulatory process for more than 80 projects representing nearly $230 billion in investments to ensure timely and predictable reviews and that new legislated timelines were met. All MPMO projects undergoing a federal regulatory review are on track to have Project Agreements signed by Deputy Heads. The MPMO is also managing whole-of-government coordination on the review process and Crown consultation for complex energy projects, including the Northern Gateway, Trans Mountain Expansion and Energy East Pipeline projects. In addition, the MPMO supported the work of the Special Federal Representative on West Coast Energy Infrastructure, which concluded with a final report that was publicly released in December 2013.

Program 1.4: Statutory Programs – Atlantic Offshore

Description

This Program is about monitoring and facilitating payment disbursal agreements and transfer payments under the Atlantic Offshore Accord Acts.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
1,255,167,000	1,255,167,000	795,884,721	795,884,721	(459,282,279)

The difference between Planned Spending and Actual Spending is mainly attributable to lower-than-anticipated payments to the Newfoundland Offshore Petroleum Resource Revenue Fund due to lower than anticipated production levels and crude oil prices; lower-than-anticipated payments to the Nova Scotia Offshore Revenue Account due to reduced royalties from higher than estimated operation costs; and, lower than anticipated Crown Share Adjustment Payments to Nova Scotia.

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
-	-	-

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Statutory requirements relating to offshore petroleum payments in Nova Scotia and Newfoundland and Labrador are managed in a timely manner	% of offshore payments processed in timely manner	100%, ongoing	NRCan anticipated and pro-actively prepared the necessary materials for 100 % of payments to be processed in a timely manner.
Statutory requirements relating to offshore petroleum payments in Nova Scotia and Newfoundland and Labrador are managed in an accurate manner	Percentage of offshore payments processed in an accurate manner	100%, ongoing	NRCan anticipated and pro-actively prepared the necessary materials 100% of payments to be processed in an accurate manner.

Performance Analysis and Lessons Learned

NRCan ensures the collection of royalties, interests and penalties arising from production in the Canada-Newfoundland and Labrador offshore area and the Canada-Nova Scotia offshore area and transfers equivalent sums as well as corporate income taxes and other required payments to the two provincial governments pursuant to the Atlantic Accord Acts.[3] NRCan also administers the federal contributions to the operating budgets of the Canada-Newfoundland and Labrador Offshore Petroleum Board and the Canada-Nova Scotia Offshore Petroleum Board. Finally, with its provincial and federal partners, NRCan manages the country's regulatory system for offshore petroleum exploration and production.

NRCan met its target relating to the timeliness and accuracy of offshore payments in 2013-14. , The Department anticipated and prepared the necessary materials for payments to be processed within a 48-hour period to both Nova Scotia and Newfoundland and Labrador as required under the *Canada-Newfoundland Atlantic Accord Implementation Act* and the *Canada- Nova Scotia Offshore Petroleum Resources Accord Implementation Acts.* As a result, 100% of payments were made on time.

[3] *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act* and *Canada-Newfoundland Atlantic Accord Implementation Act*

Strategic Outcome 2: Natural Resource Sectors and Consumers are Environmentally Responsible

Description

Energy use and natural resource development can have negative impacts on the land, water, and air, which can affect the standard of living of current and future generations. The objective of this Strategic Outcome is to encourage natural resource consumers and sectors to lessen and prevent environmental impacts. Natural Resources Canada (NRCan) contributes to the achievement of this outcome by encouraging the adoption of cleaner and more efficient technologies, products, practices and services, fostering innovative solutions to environmental challenges associated with natural resource development and use, and enabling the management of potential impacts on the environment.

Performance Measurement

Performance Indicators	Targets	Actual Results
Change in Canadian greenhouse gas emissions	Canada's national target is a 17% reduction from 2005 levels by 2020	Based on Canada's most recent emissions reporting (*National Inventory Report 1990-2012: Greenhouse Gas Sources and Sinks in Canada),* Canada's greenhouse gas emissions decreased by 5.1% (37 megatonnes [Mt]) from 2005 to 2012, while the economy grew by 10.6% in the same period. The largest emissions reductions came from the electricity sector, which declined by 35 Mt. Seventy-nine percent of Canada's electricity comes from non-emitting sources. Source**:** National Inventory Report. This report is published by Environment Canada each year and submitted to the United Nations Framework Convention on Climate Change.
Annual harvest of timber relative to the level of harvest deemed to be sustainable (Allowable Annual Cut - AAC)	Stay within the upper limit of the supply line (AAC)	As per the National Forestry Database[57], the annual timber harvest on provincial crown lands that are regulated by the AAC has been below the AAC, which reflects the recognition of sustainable forest management practices. In 2012 (the most

		recent year for which data are available), the AAC was 195 million cubic metres and the harvest was 130 million cubic metres. Source: The State of Canada's Forest – Annual Report 2013 (NRCan report – National Forestry Database).

Program 2.1: Energy-Efficient Practices and Lower-carbon Energy Sources

Description

Canada's energy markets are defined by consumption and production decisions; however, consumers and producers do not necessarily make decisions that minimize their impact on the environment due to several barriers including: 1) a lack of awareness of available options and their benefits, 2) insufficient capacity for adoption (e.g. regulatory frameworks, codes and standards, etc.) and 3) financial risk. The objective of this Program is to address these barriers and encourage and enable energy consumers and producers to adopt cleaner and more efficient technologies, products, services and practices, thereby transforming the market. This objective is achieved through education and outreach activities, targeted incentives, and regulatory interventions that keep pace with technological changes.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
444,317,619	444,317,619	430,276,325	314,652,883	(129,664,736)

The difference between Planned Spending and Actual Spending is mainly attributed to lapses in the Grants and Contributions vote for ecoENERGY for Biofuels, ecoENERGY for Renewable Power, and Sustainable Development Technology Canada Next Generation Biofuels Fund. Other factors contributing to the variance include reduced legal service costs, unexpected delays in contracting services, and expenditures originally planned for program 2.1 Energy-Efficient Practices and Lower-Carbon Energy sources being re-directed to program 1.1 Market Access and Diversification, program 2.2 Technology Innovation, and Internal Services. Slightly offsetting these reductions are funding related to the operating budget carry forward and spending related to collective bargaining increases, as well as costs recoverable from Treasury Board which have increased actual spending.

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
319	289	(30)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Energy consumers and producers adopt environmentally responsible products and practices related to energy use and production	Biofuel production in Canada	Favourable 5-year trend, as per 2007 baseline of 786.1 million litres of ethanol and 92.8 million litres of biodiesel	NRCan has met the target, as production of biofuels has increased steadily since the 2007 baseline. Programs managed by NRCan contributed towards achieving production of 1,706 million litres of ethanol and 124 million litres of biodiesel in 2013.
	Canada's total annual energy savings due to efficiency (difference between energy use without energy efficiency improvements and energy use with energy efficiency improvements; the units are petajoules [PJ])	Favourable 5-year trend in PJ saved, as per 2006 baseline	From 2007 to 2011, energy savings due to energy efficiency in Canada showed a favorable trend. Over this time period, energy efficiency improvements reduced energy use by 409 PJ. From 1990 to 2011, energy efficiency in Canada improved 23.4%.
	Renewable electricity generation capacity in megawatts (MW)	Favourable 5-year trend in MW, as per 2007 baseline of 6,753 MW of installed capacity (excluding large hydro)	Existing data suggest this favourable 5-year trend is on track as renewable electricity generation capacity increased from 6,753 MW in 2007 to 9,261 MW by 2010. The data source (Statistics Canada) has data currently available up to 2010 only.

Performance Analysis and Lessons Learned

NRCan supported the reduction in greenhouse gas emissions by continuing to encourage Canadian consumers and producers to adopt environmentally responsible products and practices. Trends at the program level show that energy efficiency savings have increased over the past two decades. The Department also supported the increase in availability of renewable energy and alternative fuels as well as the provision of clean energy expertise to support decision-making by all levels of governments. Favourable trends in the generation of renewable electricity capacity and the production of biofuels have also contributed to the reduction in emissions. For example, in 2010, total capacity from renewable electricity sources (excluding large hydro) reached

9,261 MW compared to 6,753 MW in 2007. In 2013, Canada's biofuel production included 1,706 million litres of ethanol and 124 million litres of biodiesel.

Sub-Program 2.1.1: Renewable Energy Deployment

Description

Canada has abundant renewable energy resources and deployment of renewable energy technologies will diversify Canada's energy mix and in the long-term help to decrease Canada's GHG emissions. The Sub-program is developing a supportive policy framework for marine renewable energy measures. The Sub-program will also continue to support production from renewable energy projects already deployed. This sub-program is supported by ecoENERGY for Renewable Power, the Wind Power Production Incentive, and Marine Renewable Energy Enabling Measures Programs.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
165,155,760	153,339,686	(11,816,075)

The difference between Planned Spending and Actual Spending is mainly attributed to the ecoENERGY for Renewable Power program projects which produced less renewable energy than the maximum allowable under the terms and conditions of their contribution agreements.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
10	8	(2)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Renewable electricity is produced by the projects supported by NRCan programs	# of terawatt-hours (TWh) of clean electricity produced	16.9 TWh by March 31, 2014	To date, the projects under the program have achieved 15.7 TWh of production, representing 92% of the project target.
Stakeholders have timely access to information on policy options for developing a regulatory framework for the	Policy paper advancing knowledge of policy options for administering marine renewable energy in Canada's federal	1 policy paper by March 31, 2015	This work is on-track. The knowledge gained from analysis of relevant legislation and regulations, informal

development of marine renewable energy in the federal offshore	offshore is produced on time		consultations with other stakeholders and examination of marine renewable energy regulatory regimes from eight countries is being incorporated into a draft paper, which is being prepared as a basis for more formal consultations.

Performance Analysis and Lessons Learned

NRCan is on track to achieve its renewable energy targets. The marine renewable policy paper that the Department is developing is on track to be delivered by the March 2015 target; engagements with other government departments and agencies as well as examinations of marine renewable energy regulatory regimes and policies in eight countries have yielded a strong foundation for subsequent, formal consultations.

NRCan's other efforts to support renewable power under this sub-program in 2013-14 build on the 126 contribution agreements that it signed before March 31, 2011, under the Wind Power Production Incentive and ecoENERGY for Renewable Power programs. These agreements represent 5,382 MW of renewable power capacity and total commitments for the two programs of $1.64 billion. The actual clean energy production was 93% of the project target.

Sub-Program 2.1.2: Support for Clean Energy Decision-making

Description

The development of Canada's energy resources is a source of greenhouse gas emissions and other environmental impacts. The transition to a cleaner energy mix is a long-term challenge that requires an understanding of how clean energy production options can fit within the broader energy system. This Sub-program provides tools, information and analysis to federal decision-makers and the Canadian public regarding energy-related environmental issues (particularly climate change mitigation) and clean energy technologies, and supports Canada's international climate change negotiators in understanding the impacts of energy development. This Sub-program includes activities under two Clean Air Agenda programs: the Clean Energy Policy Program and the International Negotiations program.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
3,838,850	2,990,862	(847,988)

The difference between Planned Spending and Actual Spending is mainly attributed to delays in contracting services, reduced legal service costs, and expenditures originally planned for sub-program 2.1.2 Support for Clean Energy Decision-making being re-directed to sub-program 1.1.3 Energy Market Regulation and Information and sub-program 2.2.3 Clean Energy Science and Technology.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
21	23	2

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Canadian international climate change objectives are advanced in international meetings	Percentage of Canadian objectives reflected each year in the outcomes of relevant international meetings (e.g. UNFCCC)	80% by March 31, 2014	At least 80% of Canadian objectives were reflected in the outcomes of relevant international meetings, and all outcomes respected the limits and the priorities of Canadian positions.
The public and federal government decision-makers have access to information that supports decisions on climate change and clean energy issues	Number of new or updated information products available to the public that aim to advance knowledge of Canada's energy resources and environmental impacts	10 by March 31, 2014	NRCan updated 11 oil sands fact sheets and created 3 new pipeline fact sheets that will be made available to the public. A deck on Shale Gas Development in Canada was also produced and posted on the NRCan website.
	Provision of information products (e.g. advice and analysis) to federal decision-makers regarding clean energy and environmental issues in response to requests	95% of requests fulfilled, by March 31, 2014	More than 95% of requests for information and analysis were fulfilled with accuracy and timeliness. In addition to requests, future information needs are anticipated and

			information and analysis are provided proactively.

Performance Analysis and Lessons Learned

In 2013-14, NRCan worked with federal and international partners toward greenhouse gas (GHG) emissions reductions in the energy sector. For example, NRCan continued its collaboration with Environment Canada (EC) on the sector-by-sector approach to regulating GHG emissions, including the development of regulations applicable to the oil and gas sector. Also in partnership with EC, the Department made progress on air quality regulations, which may have impacts on natural resource sectors.

NRCan continued to provide analysis on Canada's GHG emissions as reported in various publications (such as Canadian submissions to United Nations Framework Convention on Climate Change and the IEA World Energy Outlook). The information provided was conveyed through print materials related to the oil sands, and shale gas development and as advice and analysis in response to questions on clean energy and environmental issues.

On the international front, NRCan worked through various international fora to advance Canada's interests relating to clean energy technology, including carbon capture and storage (CCS). For example, the Department led Canada's participation at the November 2013 Carbon Sequestration Leadership Forum Ministerial Meeting in Washington, D.C., where it showcased Canada's leadership in advancing CCS, and enhanced overall international collaboration. NRCan also represented Canada on technology issues in negotiations at the UNFCCC, which led to the adoption of decisions aligned with Canada's interests in Warsaw in November 2013. Further, the Department represented Canada in the U.S.-led Clean Energy Ministerial (CEM), showcasing Canada as a leader in clean energy and energy efficiency, and worked collaboratively with other major economies to advance the development and deployment of clean energy technologies. All told, NRCan's international engagements at key meetings have supported more than 80% of Canadian objectives, with all the outcomes respecting the limits and priorities of Canadian positions.

Sub-Program 2.1.3: Alternative Transportation Fuels

Description

Alternative fuels (e.g., natural gas, ethanol, biodiesel, etc.) have a lower carbon content and thus emit fewer greenhouse gases than conventional transportation fuels such as gasoline and diesel. However, fuel producers and users, vehicle and equipment manufacturers, and policy makers face barriers to the production and use of alternative transportation fuels. These barriers include, but are not limited to: lack of market capacity to produce alternative fuels, lack of familiarity of end-users and other stakeholders regarding the benefits of alternative fuel use and the lack of

codes and standards governing alternative vehicles and infrastructure. In order to address these barriers, the Sub-program is responsible for increasing production capacity, designing and developing education and outreach materials and facilitating the design, development and updating of codes and standards. This Sub-program is supported by the ecoENERGY for Biofuels and ecoENERGY for Alternative Fuels programs.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
230,674,216	117,332,957	(113,341,259)

The difference between Planned Spending and Actual Spending is mainly attributed to the Sustainable Development Technology Canada's Next Generation Biofuels Fund, for which the funding allocated was not required in 2013-14. In addition, the ecoENERGY for Biofuels program had a surplus in the Grants and Contributions vote as a result of uncommitted funds to many projects, unused funds from terminated projects, and proponents producing less and claiming less than the maximum allowable under their contribution agreement.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
27	25	(2)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Fuel producers have increased capacity to produce renewable alternatives to gasoline and diesel	Number of litres of renewable alternatives to gasoline and diesel that industry has the capacity to produce	2 billion litres of domestic productive capacity of renewable alternatives to gasoline and 500 million litres of domestic productive capacity of renewable alternatives to diesel or commensurate with funds available to March 31, 2017	NRCan has mostly achieved its target of 2 billion litres by achieving 1.88 billion litres of built *production capacity* for renewable alternatives to gasoline; in 2013- 14, 1,660 million litres of ethanol were *produced* and sold by proponents. It also exceeded its alternative to diesel target by achieving 575 million litres of built *production capacity* for biodiesel. However, actual biodiesel production is below the built capacity because producers continue to be

			challenged by lack of domestic demand, poor production economics and uncertainty around blending mandates and incentive programs in the US.
Stakeholders (policy makers, end-users, alternative and conventional fuel producers, and vehicle and equipment manufacturers) have increased knowledge of alternative fuel pathways	Percentage of survey respondents reporting increased knowledge of alternative fuel pathways	80% by March 31, 2016	NRCan is on track to achieve its target of having 80% of survey respondents reporting increased knowledge of alternative fuel pathways by March, 31, 2016.
Standards community has increased ability to develop and update codes and standards related to alternative transportation fuels	Number of codes and standards committees actively working on developing and updating the codes and standards	2 until March 31, 2016	NRCan exceeded its target by supporting not only 2 committees working on codes for compressed natural gas vehicles and infrastructure, which resulted in 3 codes being published in 2013/14, but also by supporting a third sub-committee working on a code for liquefied natural gas refuelling and bi-national work on 2 standards for liquefied natural gas components.

Performance Analysis and Lessons Learned

The ecoENERGY for Biofuels program contributed towards the positive trend in production of biofuels in Canada in 2013-14. The program exceeded its target for constructed production capacity for biodiesel (575 ML/year against a target of 500 ML/year); however, market conditions, which are beyond the Department's control, impacted the delivery against the ethanol target, where constructed production capacity fell short of the target by slightly more than 5% (1881 ML/year against a target of 2000 ML/year).

The ecoENERGY for Alternative Fuels program continued to support technical committees and other stakeholders. For example, in 2013-14, it supported three technical committees, above the target of two, that were developing codes and standards related to natural gas vehicles and infrastructure. NRCan also exceeded its target to support the establishment of two natural gas

local support networks, which will act as information hubs for natural gas end-users such as fleets and other key stakeholders; three hubs were established in 2013-14.

Sub-Program 2.1.4: Energy Efficiency

Description

Increasing energy efficiency remains an effective and low-cost means of reducing greenhouse gas emissions. Many Canadian energy users are unaware of the benefits of adopting energy-efficient technologies and practices. As well, because the energy efficiency of housing, buildings, and energy-using products is continually improving, regulations, codes and standards require ongoing stringency improvements. This Sub-program encourages the adoption of energy-efficient technologies and practices through labelling, information and training, and makes the stock of housing, buildings and energy-using products more efficient through regulation, codes, standards and energy benchmarking activities. It also makes industrial and vehicle operations more energy efficient through energy management standards, practices and training. This Sub-program is supported by the ecoENERGY Efficiency program.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
44,648,793	40,989,378	(3,659,415)

The difference between Planned Spending and Actual Spending is mainly attributed to reduced outreach and a change in recipient participation in total project costs, changes in the scope of the class authority under the Housing program, reduced legal service costs, and unexpected delays in contracting IT services. Offsetting these reductions are funding related to the operating budget carry forward and spending related to collective bargaining increases, as well as costs recoverable from Treasury Board which have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
261	233	(28)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Canadians adopt NRCan-targeted energy efficient products and practices	Number of jurisdictions adopting the 2011 National Energy Code for Buildings (NECB)	4-6 provinces/territories adopting NECB or equivalent by March 31, 2016	4 provinces and territories have adopted the 2011 National Energy Code for Buildings or equivalent: 1 in 2011-12 (Ontario) and 3 in 2013-14 (British Columbia, Nova Scotia and Manitoba).
	Number of provincial/territorial/ utility programs using NRCan developed housing standards and systems	12 regional programs using NRCan developed housing standards and systems to March 21, 2016	NRCan has exceeded the target. Across Canada in 2013-14, more than 50 provincial, territorial, municipal, utility and industry programs and regulations were using the home energy rating system and NRCan standards.
Increased energy efficiency resulting from NRCan programs	Petajoules of energy saved through energy efficiency programming	36-44 petajoules by March 31, 2016	The ecoENERGY Efficiency program is on track to achieve its target of 36-44 petajoules of energy saved through energy efficient programming by March 31, 2016. In 2013-14, the program achieved more than 22 petajoules of energy savings as a result of energy efficiency programming in the housing, buildings, industry, equipment, and transportation sectors.

Performance Analysis and Lessons Learned

NRCan contributed to Canada's long-term goals for the reduction of greenhouse gas emissions while saving Canadian consumers and businesses money. It did this by supporting responsible energy use in Canada through energy efficiency measures, such as training initiatives for individuals and the development of codes and regulations. Accordingly, NRCan met its target in 2013-14 with three more provinces (British Columbia, Manitoba and Nova Scotia) adopting the National Energy Code for Buildings. Furthermore, NRCan’s national housing energy systems

and tools have grown to be used in more than 50 provincial, territorial, municipal, utility and industry home energy programs and regulations. For example, these programs and regulations have served to provide consumers with utility incentives and specialty financial products and municipalities with new bylaws.

Through the ecoENERGY Efficiency program, more than 22 petajoules of energy were saved in 2013-14; NRCan is on track to achieve its target energy savings by 2016. This is equivalent to the energy required by more than 215,000 households over one year (excluding transportation requirements). The program exceeded its target of providing training to individuals in the transportation, industry, buildings and housing sectors – collectively training almost 18,000 more individuals than anticipated by March 31, 2014.

Program 2.2: Technology Innovation

Description

Solutions to the environmental challenges faced by the natural resource sectors require sustained efforts in research, development and demonstration because the current level of science and technology is inadequate to address these concerns. However, the natural resource sectors neither have all the necessary knowledge nor make the necessary investments in innovation due to the potential poor return on investment. The objective of this Program is to encourage academia, industry and the public sector to research, develop and demonstrate innovative solutions to environmental challenges encountered in the natural resource sectors. This objective is achieved through the generation and dissemination of scientific knowledge, and the development and demonstration of new technologies.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
265,761,737	265,761,737	235,868,140	155,738,548	(110,023,189)

The difference between Planned Spending and Actual Spending is mainly attributed to the Clean Energy Fund frozen grant and contribution amounts resulting from conditions imposed by Treasury Board that were not met for the Yellowknife, Borealis and Spectra projects. Other factors contributing to the lapse include surpluses in the Clean Energy Fund and Class Grant & Contribution authorities, delays with equipment purchases, and delays with project approval processes for Memorandum of Understanding renewals. In addition, there were in-year transfers to programs 1.3 Investment in Natural Resource Sectors that were not accounted for in the planned spending related to the Program of Energy Research and Development and the ecoENERGY Innovation Initiative and Internal Services. Furthermore, expenditures that were originally planned for program 3.1 Protection for Canadians and Natural Resources were subsequently spent in program 2.2 Technology Innovation. Slightly offsetting these lapses are in-year transfers from program 2.1 Energy-Efficient Practices and Lower-Carbon Energy Sources that are not accounted for in the planned spending, funding related to the operating budget carry forward and spending related to collective bargaining increases, as well as costs recoverable from Treasury Board.

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
622	631	9

The majority of the difference between Planned and Actual Budgetary Financial Resources was related to grant and contribution programs, which do not impact FTEs. The difference between Planned FTEs and Actual FTEs is related to some sub-programs having more FTEs than originally planned.

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Stakeholders invest in S&T to address environmental challenges	Dollar amount of stakeholder investments in S&T to address environmental challenges	5% increase over 5 years (2005 baseline $934 million)	NRCan met its target of increasing stakeholders' investments in S&T to address environmental challenges. For example, third-party support for projects under the Isotope Technology Acceleration Program is helping to develop new isotope technologies that significantly reduce the radioactive waste produced, while work under the Green Mining sub-program has led to the development of plasma torch technologies to break rock without the use of explosives.

Performance Analysis and Lessons Learned

Reducing the environmental impacts of natural resource development, including greenhouse gas emissions, requires efforts from all levels of government and the public, as described above. However, industry and other stakeholders also have a significant role to play, as they are well positioned to address environmental challenges on the ground and implement innovative practices. NRCan therefore partners with these groups to fund science and technology to address the environmental challenges facing Canadians and Canada's natural resource sector.

NRCan's programs have been able to generate millions of dollars from stakeholders towards research into new materials, demonstration technologies, and innovation in green mining, clean energy and other areas. Through a number of targeted financial assistance programs, NRCan met its goal of having stakeholders contribute 5% more than in the base year. Programs such as the

Isotope Technology Acceleration Program, for example, provide financial assistance of up to 65% of the total project cost to fund research. In 2013-14, NRCan funding supported research to develop new isotope production technologies, next-generation nuclear reactors and other technologies to address environmental challenges.

Sub-Program 2.2.1: Materials for Energy

Description

This sub-program directly delivers materials research and solutions that enable cleaner energy production, and more efficient use of energy in end-use applications such as transportation and industry. Canada must reduce greenhouse gas emissions from energy production, transportation and use; grow energy supply; and maintain a mix of energy sources and technologies. Innovative materials solutions are key enablers for new technologies for extraction and processing of oil sands and for nuclear and coal-fired power generation. New materials technologies are also needed to increase oil and gas pipeline capacity and to monitor pipeline performance and integrity. The Sub-program develops advanced materials and processing technologies to reduce vehicle emissions. Key strategies to reduce energy use by conventional, electric and hybrid-electric vehicles are to reduce vehicle weight; increase powertrain efficiency; and improve energy storage, fluid management and other systems. Collaboration with vehicle manufacturers, suppliers and the U.S. Department of Energy drives priorities, accelerates applied research and development and reduces implementation risks for businesses.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
9,189,236	16,038,008	6,848,772

The difference between Planned Spending and Actual Spending is mainly attributed to the in-year transfers from sub-program 2.2.3 Clean Energy Science and Technology related to the Program of Energy Research and Development and the ecoENERGY Innovation Initiative that are not accounted for in the planned spending. In addition, funding related to the operating budget carry forward and spending related to collective bargaining increases, as well as costs recoverable from Treasury Board have increased actual spending. Furthermore, expenditures that were originally planned for sub-program 3.1.2 Materials and Certification for Safety and Security were subsequently spent in sub-program 2.2.1 Materials for Energy.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
79	83	4

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Industry uses advanced materials technologies in new energy-efficient vehicle designs	Number of advanced materials technologies to which NRCan contributed that are identified by industry stakeholders for implementation in new energy efficient vehicles to be produced in North America	2 over 3 years (by March 31, 2015)	NRCan is on track to meet the target by March 2015. In 2013-14, NRCan delivered one materials technology on the mechanical properties of spot welds to be used on vehicle body structures that are lighter than their steel counterparts.
Industry uses new materials technologies in nuclear reactors	Number of new materials technologies developed or validated by NRCan in nuclear reactor designs submitted for approval	3 over 5 years (by March 31, 2017)	NRCan is on track to meet this target by March 2017. Phase 1 of a project with Atomic Energy of Canada Limited was completed in 2013-14. CanmetMATERIALS has been selected as one of the four promising candidate alloys for Canadian Gen IV SCWR fuel cladding. Also, this year, the development of new metallic coatings to protect steels from corrosion in high-temperature supercritical water has advanced to testing.
Industry uses new materials technology to transport fossil fuels effectively (safely and efficiently)	Number of proposed projects to transport fossil fuels more effectively (safely and efficiently) using new materials technologies developed or validated by NRCan	3 over 5 years (by March 31, 2017)	In 2013-14, NRCan developed two new standards related to pipelines integrity: an improved method of determining the maximum acceptable girth weld flaw size in pipelines; and, assessing compatibility between the plant-applied and field-applied coatings used in pipelines. A third standard has been submitted for review, on

			whether the toughness of pipe steel is sufficient for crack arrest, thus avoiding long-running fractures. A state-of-the-art full-scale SCC pipe testing facility has been successfully commissioned at the CanmetMATERIALS laboratory furthering NRCan's research into the SCC resistance of pipelines.

Performance Analysis and Lessons Learned

NRCan continued to engage its industrial partners in applied research and development, moving materials innovations further up the technology readiness scale. With staffing and commissioning of major capital investments nearing completion at its CanmetMATERIALS laboratory, NRCan was well positioned to positively impact the competitiveness and environmental performance of industry.

NRCan is on track to meet its targets through developing technologies focusing on energy efficiency in vehicles, clean energy supply and the safe and efficient transport of oil and gas. The end goal of these technological developments is to have materials knowledge deployed in decision-making, design and fabrication processes within industry. The impacts stemming from this work are expected to accrue through higher volume production, cleaner energy sources and safer pipeline.

Sub-Program 2.2.2: Green Mining

Description

Mining and processing has impacts on land, water and air. Technology development and commercialization entail significant financial, market, and technical risk, because uptake is dependent upon regulatory requirements, business investment priorities and availability of funding. This Sub-program reduces business risks by developing and demonstrating innovative mining technologies and practices that eliminate or reduce environmental impacts and risks. Business needs, technology gaps and priorities are identified with input from the Canada Mining Innovation Council and an advisory committee. Applied research aims to a) reduce land disturbance; water, energy and hazardous chemical use; waste volumes; and releases to the environment and b) accelerate site restoration. By responding to business needs and seeking out synergies, the Sub-program focuses development efforts on technologies with the most potential to reduce environmental impacts and risks and to expand domestic and international business

opportunities for mining companies, technology developers and consultants. Findings also a) contribute to the scientific, technological and socioeconomic basis for updating federal, provincial and territorial mining and environmental regulations and policies and b) inform policy priorities in other countries that drive demand for technologies and services.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
7,052,371	9,232,172	2,179,801

The difference between Planned Spending and Actual Spending is mainly attributed to the in-year transfers from sub-program 2.2.3 Clean Energy Science and Technology related to the Program of Energy Research and Development and the ecoENERGY Innovation Initiative that are not accounted for in the planned spending. In addition, spending related to collective bargaining increases and costs recoverable from Treasury Board have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
74	80	6

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Academic, government and other non-industry partners increase financial and in-kind contributions	Value of financial and in-kind contributions by academic, government and other non-industry partners collaborating with NRCan	10% increase over 3-year baseline of $1.0 million (by March 31, 2015)	In 2013-14 the value of financial and in-kind contributions was $1,200,000 and NRCan is on track to meet the target by March 2015.
Industry partners increase financial and in-kind contributions	Value of financial and in-kind contributions by industry partners collaborating with NRCan	10% increase over 3-year base line of $3.6 million (by March 31, 2015)	In 2013-14 the value of financial and in-kind contributions was $3,700,000 and NRCan is on track to meet the target by March 2015. Contributions in 2013-14 from industry include support for plasma torch technology to break rock without explosives and a gap analysis of mining techniques in the north to address environmental challenges.

Technology developers increase demonstration of environmental technologies	Number of demonstration projects	2 over 5 years (by March 31, 2017)	NRCan completed one demonstration project in 2012-13 on Ventilation on Demand and is on track to start a second; it is on track to meet its target.

Performance Analysis and Lessons Learned

NRCan continued to work effectively with industry and technology developers to demonstrate environmental technologies, including underground mining projects. Building on its success demonstrating ventilation on demand (VOD) technologies at Vale's Sudbury operations, NRCan remained on track to demonstrate a second technology, related to land use on mine waste.

NRCan's partnerships with academia, government and non-industry stakeholders have also continued to result in successes in soliciting financial and in-kind contributions from these groups to fund important mining-related research and technologies. These partnerships, which help inform better R&D, promote innovative new technologies that will reduce energy consumption and the environmental footprint of mining. For example, NRCan supported the development of a protocol to see how metals react in aquatic salt-water environments over time, which will impact environmental research related to marine and aquatic ecosystems. NRCan also continued its work to develop a high-temperature hybrid filtration-based process for the treatment and discharge of water streams generated in in-situ oil sands operations to recover additional bitumen and to produce clean water for reuse. This treatment system offers an effective alternative to the conventional treatment system and will allow for significant energy savings and improved environmental performance.

NRCan recognizes the importance of networking and stakeholder relations to obtain key policy information to guide science in new areas of development. The capacity of building trust with industry allows for ease of operations, such as access to samples, and continuity of project delivery, which is crucial to the success of the overall project development and industry's adoption of new innovation. To this end, NRCan worked with industry partners to support environmental technologies to address current and future environmental concerns. Recent achievements included the development of plasma torch technology for breaking rock without explosives, and the completion of a gap analysis of mining techniques in the North to address environmental risks and challenges.

An evaluation by internal and external stakeholders was undertaken this year to provide recommendations for improvement of the Green Mining Initiative and NRCan is working towards adjusting its programming based on the recommendations contained therein.

Sub-Program 2.2.3: Clean Energy Science and Technology

Description

Energy production and use has environmental impacts that cannot be adequately addressed using existing technologies. This Sub-program establishes collaborations with academia, industry and the public sector to research, develop and demonstrate innovative solutions for environmental challenges in the energy sector. The objective is for academia, industry, and the public sector to lay the foundation for the next generation of clean energy products and practices that will have fewer negative impacts on Canada's air, land and water, by funding, creating and advancing new energy knowledge and technologies. This Sub-program is supported by the Program of Energy Research and Development, and the Clean Energy Fund, and ecoENERGY Innovation Initiative, and the Isotope Technology Acceleration Program.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
249,520,130	130,468,368	(119,051,762)

The difference between Planned Spending and Actual Spending is mainly attributed to the Clean Energy Fund frozen amount in the Grants and Contributions vote resulting from conditions imposed by Treasury Board that were not me for the Yellowknife, Borealis and Spectra projects. Other factors contributing to the lapse include surpluses in the Clean Energy Fund and Class Grant & Contribution authorities, delays with equipment purchases, and delays with project approval processes for Memorandum of Understanding renewals. In addition, there were in-year transfers to sub-programs 1.3.5 New Energy Supply, 2.2.1 Materials for Energy, and 2.2.2 Green Mining that were not accounted for in the planned spending related to the Program of Energy Research and Development and the ecoENERGY Innovation Initiative, slightly offset by transfers from sub-program 2.1.2 Support for Clean Energy Decision-making.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
469	469	-

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Academia, industry and the public sector pursue clean energy S&T that has fewer negative environmental impacts	Ratio of total NRCan program investments in clean energy S&T versus leveraged funding from partners	1:1 ratio by March 31, 2014	NRCan’s collaborations under this sub-program yielded greater funding from stakeholders than from NRCan. NRCan investments, through the Innovation and Energy Technology Sector for 2013-14 had a ratio of 1:6 or $470 million

			leveraged from an NRCan investment of $79.8 million, primarily due to significant spending on two Clean Energy Fund large-scale Carbon Capture and Storage demonstration projects. Through its Isotope Technology Acceleration Program, NRCan achieved an average stakeholder investment of 54% over three projects signed in 2013-14.

Performance Analysis and Lessons Learned

NRCan continued to make progress in 2013-14 on supporting the research, development and demonstration of clean energy projects, which are instrumental for addressing the environmental impacts that arise from the production of traditional forms of energy. Notably, these initiatives have been funded primarily with industry dollars.

For example, in 2013-14, through the Program of Energy Research and Development, NRCan funded approximately 306 clean energy R&D projects on a range of issues in energy supply, distribution and end use, including five projects to develop measures to address offshore oil spills. In the same fiscal year, through the ecoENERGY Innovation Initiative, NRCan undertook 101 R&D and demonstration projects in five strategic priority areas: energy efficiency, clean energy and renewable fuels, bioenergy, electrification of transportation, and unconventional oil and gas. Additionally, NRCan signed three contribution agreements under the Isotope Technology Acceleration Program to support further development of commercial alternatives to existing reactor-based medical isotope technologies. Consistent with the Government of Canada's intention to exit the medical isotope business in 2016 and move towards a fully market-based supply chain, the anticipated commercialization of these technologies is expected to improve the security of supply for Canadians, reduce the generation of radioactive waste and support nuclear non-proliferation.

Evaluations of both the Clean Transportation Systems Portfolio and the Built Environment Portfolio were completed and overall were positive. The findings showed that these programs are relevant and that the federal government and NRCan have a legitimate role in these areas of R&D. Areas identified for improvement were related to dissemination of knowledge and transfer of the technology progress gained; NRCan will work towards implementing these improvements. An evaluation of the Clean Energy Fund was completed as planned in 2013-14.

Program 2.3: Responsible Natural Resource Management

Description

Greater knowledge of risks and environmentally responsible practices could help to prevent and reduce the environmental impacts of past, present and future natural resource development. The objectives of the Program are to enable government departments, regulatory bodies and industry to assess these impacts to the environment; and develop, monitor and maintain resources or clean up wastes responsibly. These objectives are achieved through the provision of assessments and knowledge rooted in sound science, and through waste management efforts in collaboration with provinces, federal agencies and municipalities.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
341,051,255	341,051,255	330,109,153	282,047,031	(59,004,224)

The difference between Planned Spending and Actual Spending is mainly attributed to the Port Hope Area Initiative which experienced delays as a result of a later than anticipated approval date of implementation and due to the need to reflect Public Works and Government Services Canada approval timelines. In addition, expenditures that were originally planned for program 2.3 Responsible Natural Resource Management were subsequently spent in program 1.2 Innovation for New Products and Processes, program 3.2 Landmass Information, and Internal Services. Slightly offsetting these reductions are funding related to the operating budget carry forward and spending related to collective bargaining increases, as well as costs recoverable from Treasury Board.

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
285	235	(50)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Federal government implements waste management practices that meet modern standards for safety and environmental protection	Number of contaminated sites where the environmental impacts are reduced	7 by March 31, 2016	NRCan continued to make progress toward meeting its target. Specifically, it worked to reduce environmental impacts at Whiteshell and Chalk River Laboratories, Glace Bay, Port Granby and Welcome waste management facilities, and in Port Hope and Northern Transportation

			Route sites
Public and private sectors establish practices to mitigate the environmental impacts to natural resources	Number of public and private sector new/updated policies, regulations or other decision-making tools completed annually	3 by March 31, 2014	NRCan met its target in 2013-14 through development of rigorous assessments of the role played by Canada's forests in climate change mitigation and sharing resources on groundwater geoscience.

Performance Analysis and Lessons Learned

A means of addressing environmental impacts of natural resource development is the provision of science-based information and assessments to all natural resource sectors to support informed decision-making, including those for federal regulatory approval processes. In 2013-14, NRCan developed the first rigorous national biophysical and economic assessment of specific options for how Canada's forests could contribute to climate change mitigation. It also contributed to interdepartmental analysis of how Canada could meet its 2020 greenhouse gas emissions reduction target. NRCan's publications relating to groundwater resources, the oil sands, shale gas and CCS were also used by stakeholders to improve their own operations. Finally, NRCan's efforts under this program also resulted in continued progress towards a reduction in the number of environmental impacts from contaminated sites (e.g., Whiteshell, Chalk River Labs, Glace Bay, Port Granby and along the Northern Transportation Route).

Sub-Program 2.3.1: Forest Ecosystems Science and Application

Description

Sustainable development of Canada's forests requires that forest ecosystems and their health are better understood, monitored and assessed as forests are susceptible to climate-induced changes, natural (disease) and man-made influences (harvesting, land-use changes). Decision-making, professional practice, international reputation and market access to forest-related products all rely on sound science and knowledge that enables a better understanding of changing forest dynamics. The objective of this Sub-program is to increase the overall scientific knowledge on forest ecosystems and support knowledge-based sustainable forest management policies and practices that consider sound ecological, social, and economic principles.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
19,009,783	19,543,165	533,382

The difference between Planned Spending and Actual Spending is mainly attributed to costs recoverable from Treasury Board. In addition, funding related to the operating budget carry forward and spending related to collective bargaining increases contributed to this variance.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
152	132	(20)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Governments, industry, non-governmental organizations and other stakeholders are provided with scientific knowledge on forest ecosystems to support knowledge-based sustainable forest management policies and practices	Representation of the Canadian Forest Service on advisory boards or committees involving governments, industry, and non-governmental organizations in order to provide scientific knowledge on forest ecosystems	Maintain current representation on 128 advisory boards or committees, ongoing	NRCan representatives sat on 123 committees and boards in 2013-14 serving in the capacity of subject matter experts, policy advisors, project coordinators and leaders, and editors of national and international peer-reviewed journals.

Performance Analysis and Lessons Learned

Although forest management is a responsibility of the provinces and territories, NRCan helps to reduce the environmental impacts that could result from forest management practices by providing expertise to these stakeholders on how to address challenges related to maintaining the sustainability of forest ecosystems. Through its representation on 123 forest ecosystem advisory boards and committees, NRCan was within 5% of its target of participating on 128 such organizations in 2013-14, since it fluctuates annually

Through the Climate Change Task Group of the Canadian Council of Forest Ministers, NRCan contributed to identifying and developing options to respond to a variety of domestic forest challenges, such as climate change adaptation in the forest sector. Canada's National Forest Carbon Monitoring, Accounting and Reporting System, for which NRCan continued to develop its carbon budget model, and updated information related to deforestation, enabled

improvements to the estimation of forest carbon and estimates of greenhouse gas emissions by the provinces for use in analysis and reporting.

Through the Cumulative Environmental Management Association, NRCan maintained membership and involvement in a number of working groups and task groups and provided advice on the development of practices and guidelines for successful reclamation of landscapes disturbed by oil sands production. NRCan provided a broad range of advice through this group, including technical advice on the design and operation of plot-based monitoring networks in natural and reclaimed areas, and services related to the development and review of work plans of the Association's forest-related initiatives.

Sub-Program 2.3.2: Groundwater Geoscience

Description

Groundwater provides up to 80% of the rural Canadian population's drinking water and is an essential component of ecosystem health. In the face of growing pressures on water resources due to urbanization, economic expansion and growing energy demands, Canada needs a consistent and coordinated approach to groundwater management. NRCan conducts groundwater mapping and assessment activities on key aquifers to better understand the extent of groundwater systems, their dynamics and vulnerability using common protocols, standards and methods. NRCan also collaborates with its provincial partners to ensure data and approaches in different jurisdictions are harmonized. This information is disseminated through a collaborative, national inventory used by other levels and departments of government, planners and land-use professionals for decision-making. The sub-program's comprehensive groundwater information resource and expertise contributes to sustainable land-use decision-making and groundwater management activities, which in turn, supports responsible development of Canada's natural resources.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
3,511,475	4,524,619	1,013,144

The difference between Planned Spending and Actual Spending is mainly attributed to costs recoverable from Treasury Board, spending related to collective bargaining increases, and the employee benefit plan.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
28	28	-

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Government and industry have access to groundwater geoscience through a national inventory to support a consistent and coordinated approach to groundwater management	Number of knowledge citations (e.g., aquifer maps, plans and reports) using NRCan's groundwater maps and assessments	10 by March 31, 2014	NRCan exceeded its target of having its groundwater maps, books and assessments cited more than 15 times. In 2013-14, citations were received by municipalities, counties and private sector consultants associated with the mapping and assessment projects that were completed over the years (such as Paskapoo, Spiritwood, Richelieu, and Southern Ontario) or ongoing projects, including Nanaimo.

Performance Analysis and Lessons Learned

Through the ongoing provision of groundwater maps and assessments in 2013-14, the Department informed sustainable land-use and groundwater management activities, which support the responsible development of natural resources and help with anticipating environmental impacts. Through the Groundwater Geoscience Program, NRCan delivered maps, assessments and characterization activities relating to seven key aquifers (e.g., Nanaimo, British Columbia, Milk River, Alberta, and Spiritwood, Manitoba). For example, NRCan’s Nanaimo aquifer map and assessment provided the baseline information needed to develop 3D models for groundwater management. These and other products have been cited more than 15 times Canada-wide as having contributed to the advancement of a coordinated and consistent approach to groundwater management. The sub-program also released *Canada’s Groundwater Resources*, a comprehensive 800+ page book that is a synthesis of knowledge on Canada’s groundwater.

Other key deliverables achieved in 2013-14 were released and shared in a comprehensive and timely manner. These included field characterization studies, geophysical surveys, data analyses, interpretation and production of maps and reports, government reports submitted to provincial partners for revision, publication of three open files and geophysical assets, and five peer-reviewed papers. Many of these deliverables and the expertise contained therein were cited by provincial government departments, including geological surveys in Quebec, Ontario and Alberta, Manitoba Conservation and Water Stewardship, Nanaimo Regional District, and universities. Finally, NRCan ensured longevity of its geoscience information products through incorporating them into the Groundwater Information Network, a national portal.

An evaluation of the Groundwater Geoscience Program (GGP) found that the GGP is relevant, has been quite successful at achieving progress towards its intended outcomes and is well managed. Evaluation recommendations focused on clarifying the program's mandate with stakeholders, ensuring alignment with their data needs, and developing common minimum data standards. The program is following-through on the recommendations in the evaluation, having already completed one of them.

Sub-Program 2.3.3: Environmental Studies and Assessments

Description

Government departments, regulatory bodies and industry require information rooted in sound science in order to reduce the environmental impacts that may occur in the development of major resource projects. This Sub-program provides innovative scientific information such as remote sensing science and geoscience expertise to address the environmental risks, impacts and constraints imposed by metals mining, northern pipelines, the oilsands and offshore energy development. NRCan's expertise also contributes toward the completion of environmental assessments required by the Canadian Environmental Assessment Act (CEAA) and for all federally triggered or regulated projects and/or reviews. The expertise is also used in published assessments of non-renewable mineral and energy resources, which are necessary in designating new federal parks and protected areas on federal lands.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
7,616,604	7,187,692	(428,912)

The difference between Planned Spending and Actual Spending is mainly attributed to the smaller contribution of salary expenditures used to support the program.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
66	45	(21)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Governments, regulatory bodies and industry have access to sound environmental geoscience information	Number of knowledge attributions – e.g., citations – using NRCan's remote sensing data, geoscience data, or derived information, within the context of environmental studies, reports, or guidelines (excluding CEAA Environmental Assessments, and Mineral and Energy Resource Assessments)	5 by March 31, 2014	NRCan's publications from the Environmental Geoscience Program have been used at least five times by governments, regulatory bodies and industry. Groups like Bureau d'audiences publiques sur l'environnement in Quebec for shale gas, Alberta Environment for the oil sands, and SaskPower for carbon capture and storage are examples of agencies using NRCan information.
	Percentage of responses, including expert opinion, delivered as per Environmental Assessments (EA) and Mineral and Energy Resource Assessments (MERA) requests for scientific technical expertise	99% by March 31, 2014	NRCan (i.e., one or more sectors) responded with timely technical reviews and advice for 62 projects that were subject to a federal environmental assessment review process.

Performance Analysis and Lessons Learned

The Environmental Geoscience Program (EGP) focuses on characterizing environmental impacts of metals mining, northern energy development, shale gas, northern mineral development, and oil sands development. It was designed to generate new geoscience knowledge to support the development of guidelines and best practices that allow federal regulators and industry to make informed decisions about ecosystem risk management in resource development projects. More

than 40 internal and external documents were published by the program in 2013-14. The EGP continued to maximize value in its delivery by leveraging expertise and in-kind resources from other government departments and private sector partners to accomplish research related to shale gas, oils sands and permafrost monitoring projects. Specifically, the program developed projects with early promising results for distinguishing between natural and human-caused environmental contamination from development projects using new and innovative techniques.

The sub-program also delivered geological, seismological, geotechnical, metallurgical, hydrospectral and other scientific advice and technical review for environmental assessments under the CEAA and Northern Environmental Assessment regimes. It released Mineral and Energy resource assessments for Thaidene Nene East Arm of Great Slave Lake, Northwest Territories, and Lancaster Sound National Marine Conservation Area, Nunavut in 2013-14.

As per an evaluation, the Environmental Studies and Assessments sub-program performed well at meeting legislated obligations and objectives of identifying risks of environmental impacts, and informing stakeholders on the validity of environmental impact claims and the resource potential of proposed protected federal lands. NRCan is following up on recommendations focused on ensuring capacity continues to exist to meet future needs in a timely manner, and strengthening program connections to federal and provincial policy, and regulatory groups at the EGP program level.

Sub-Program 2.3.4: Radioactive Waste Management

Description

In the past, radioactive waste management requirements to protect the environment and human health were neither in place, nor as stringent as modern day practices. Thus, historic nuclear or uranium mining activities have, in some cases, resulted in a legacy of radioactive waste or contaminated lands that pose risks to the environment and the health of Canadians. This Sub-program uses policy and program development and implementation to establish long-term management solutions for radioactive waste in areas where federal intervention is required. Specifically, Natural Resources Canada is involved in clean-up operations in cases where either the wastes were produced by a crown corporation, or the original private sector producer either no longer exists or cannot be held responsible. This Sub-program partners with provinces, municipalities and the private sector through the following programs: the Nuclear Legacy Liabilities Program; the Historic Waste Program, including the Port Hope Area Initiative; and the Gunnar and Lorado program.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
288,658,393	249,010,320	(39,648,073)

The difference between Planned Spending and Actual Spending is mainly attributed to the Port Hope Area Initiative which experienced delays as a result of a later than anticipated approval date of implementation and is due to the need to reflect Public Works and Government Services Canada approval timelines. There were also expenditures that were originally planned for sub-program 2.3.4 Radioactive Waste Management that were subsequently spent in sub-program 1.2.1 Mining Innovation. Offsetting these reductions are funding related to the operating budget carry forward and spending related to collective bargaining increases, as well as costs recoverable from Treasury Board all of which increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
39	18	(21)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
The federal government manages (develops and implements) long-term management solutions to clean up radioactive waste	Percentage compliance with applicable Canadian Nuclear Safety Commission institutional controls/licenses to implement management practices	100% by March 31, 2022	The Department remained fully compliant with CNSC requirements at all sites for which it is responsible.
	Percentage of radioactive waste management milestones completed under the Nuclear Legacy Liabilities Program	80% by March 31, 2014	The Department was able to exceed the established target of 80% by completing 93% of the radioactive management milestones under the three-year second phase, which ended March 31, 2014. The remaining milestones will be carried forward to 2014-15.
	Percentage of waste management obligations achieved under the Port Hope Legal Agreement for each project	100% by March 31, 2022	The Department continued to meet commitments under the environmental assessments and legal agreements for each of the projects.

Performance Analysis and Lessons Learned

A number of accomplishments were achieved under the Nuclear Legacy Liabilities Program in 2013-14, serving to reduce Canada's overall environmental liability. The Program completed 93% of its milestones for the three-year second phase of the Program. Milestones completed relate to the completion of the Glace Bay Site Restoration and transfer of the land to Enterprise Cape Breton Corporation for reuse and redevelopment, the installation of a permeable reactive barrier to intercept and treat radioactively contaminated groundwater from a historic waste burial area at the Chalk River Laboratories (CRL), addressing a key issue from the CRL site ecological risk assessment, and installing at CRL a 15,000 m^2 engineered cover over a large volume of buried, low-level radioactive waste (approximately 100,000 m^3) to reduce water infiltration and limit the further spread of groundwater contamination.

In 2013-14, the Port Hope Area Initiative (PHAI) was able to advance construction of the Port Hope Project Waste Water Treatment Plant, bringing the total work completed to 70%, and the Port Granby Project Waste Water Treatment Plant, bringing the total work completed to 90%. Commissioning of the plants should be completed in 2014-15.

Each liability for which NRCan is responsible was managed with the utmost regard for legal, environmental and regulatory considerations; all waste management obligations under the Port Hope Legal Agreement were met, as were all requirements of the Canadian Nuclear Safety Commission.

Sub-Program 2.3.5: Earth Observations for Responsible Development of Natural Resources

Description

Efficient and effective regulatory frameworks are the key to ensure responsible development of natural resources. One challenge to such regulatory frameworks is the availability of sufficient environmental information and the associated tools that depict the baseline conditions of valuable environmental components (lands, water and vegetation), the cumulative effect of resource development, and the potential effect of mitigation options. The Earth Observation for responsible development of natural resources sub-program provides satellite Earth observation and geospatial layers that are a fundamental source of information for regulatory frameworks. The sub-programs focus is on the oil sands region as well as other oil/gas concentrated regions in Canada, including the North.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
22,255,000	1,781,235	(20,473,765)

The difference between Planned Spending and Actual Spending is mainly attributed to budget reallocation. Expenditures planned for sub-program 2.3.5 Earth Observation for the Revitalization of Antennas were subsequently spent in sub-program 3.2.1 Essential Geographic Information.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
-	12	12

The difference between Planned FTEs and Actual FTEs relates to an FTE re-allocation which moved FTEs that were planned for sub-program 3.2.1 Essential Geographic Information to sub-program 2.3.5 Earth Observation.

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Governments, regulatory bodies and industry have access to sound Earth observation scientific information (i.e., value-added datasets and publications) to support responsible resource development	Number of attributions (i.e., value-added datasets and scientific publications) using NRCan Earth observation scientific information	5 by March 31, 2014	NRCan exceeded this target. For example, six conference and workshop papers and presentations were made by the Alberta Energy Regulator citing NRCan Earth observation studies, datasets and associated methods in the Alberta oil sands regions and their potential to improve regulatory monitoring related to responsible energy development.

Performance Analysis and Lessons Learned

NRCan strengthened the regulatory framework around resource development, thereby improving Canada's stewardship of its natural resources, by providing earth observation scientific information to stakeholders. To this end, NRCan's earth observation scientific information was cited numerous times in 2013-14 by governments, regulatory bodies and industry. Within the federal government, for example, NRCan's earth observation data enabled Environment Canada to more comprehensively model variations in plant canopies and their influence on natural emissions to assess air quality.

In other jurisdictions, the Department's expertise enabled the Alberta Energy Regulator (AER) to expand its remote sensing capacity to develop and implement the radar techniques provided by NRCan to improve capability and capacity to ensure responsible resource development. Based on NRCan's earth observation data, AER began to develop internal capacity to understand and model surface deformation to further reduce risks related to oilsands' activities (e.g. bitumen leaks). Additionally, NRCan's earth observation data have enabled stakeholders in Alberta to develop more comprehensive maps for fire management in the oil sands region.

Strategic Outcome 3: Canadians have Information to Manage their Lands and Natural Resources and are Protected from Related Risks

Description

It is through only a deep and expansive understanding of Canada's lands and natural resources so that today's decision-makers can determine the right choices for tomorrow – choices that keep Canada's lands and natural resources properly managed and safeguarded. This deep and expansive understanding requires expertise and technology. The objective of this strategic outcome is achieved by providing this expertise and technology, enabling a) the management of risks to human, natural resource, and infrastructure health and b) the use of landmass knowledge.

Performance Measurement

Performance Indicators	Targets	Actual Results
Number of new and updated public and private sector adaptation and risk mitigation activities, plans and strategies, such as Natural Resource Management Plans, Adaptation Plans or Emergency Preparedness Plans using NRCan information	5 activities, plans or strategies	NRCan has met this target by facilitating public and private sector organizations in their development of more than nine adaptation and risk mitigation activities, plans and strategies through information, services and collaboration. Source: Annual Program Performance Reports.
Number of national or international interoperable geo-tools and data frameworks that support the management of lands, natural resources, national infrastructure and human populations	2 (baseline as of 2012-13)	NRCan has released new tools and data frameworks, which contribute to the management of Canada's lands and natural resources. Source: Annual Program Performance Reports.

Program 3.1: Protection for Canadians and Natural Resources

Description

Natural resource development and military activities, and changes in the environment pose risks to human, natural resource and infrastructure health. Without the appropriate coordination for and knowledge on the management of these risks, the impacts would be severe. The objective of this Program is to enable other government departments, communities, and the private sector to manage these risks to human, natural resource, and infrastructure health. This objective is achieved by providing regulation and knowledge, fulfilling legislated responsibilities, and ensuring capacity.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
58,484,119	59,202,413	66,418,340	65,535,095	6,332,682

The difference between Planned Spending and Actual Spending is mainly attributed to the receipt of internal transfers in support of the Program of Energy Research and Development as well as the Strategy to Implement a World-Class Prevention Preparedness and Response Regime for Oil Spills from Ships Initiative. In addition, funding received through Supplementary Estimates related to the Canadian Safety and Security Program; the operating budget carry forward, spending related to collective bargaining increases and costs recoverable from Treasury Board have increased actual spending. Slightly offsetting this increase in spending is a surplus in the Climate Change Impacts and Adaptation program, due to a reprofile of contribution funding from previous years, which resulted in a surplus as the program could not expend the funds on time. In addition, expenditures that were originally planned for program 3.1 Protection for Canadians and Natural Resources were subsequently spent in Internal Services and program 2.2 Technology Innovation, and as a consequence, the vote netted revenue collected in this program exceeded the actual spending due to the majority of expenses being incurred in program 2.2 Technology Innovation and the revenue being collected in program 3.1 Protection for Canadians and Natural Resources.

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
456	469	13

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Other government departments, communities, and the private sector manage risks to natural resources, infrastructure, and human health	Number of active collaborations with the public and private sector that manage risks to human population, natural resources and infrastructure health	3 collaboration agreements by March 31, 2014	Through its active participation in the Canadian Council of Forest Ministers and associated working groups, NRCan collaborated with provincial and territorial governments to further characterize risks,

			vulnerabilities and impacts associated with forest disturbances of national significance. NRCan also established two new Adaptation Platform working groups in 2013-14, one on water and climate information, and the other on infrastructure and buildings.
	Number of climate change risk or related assessments completed on natural resources and infrastructure	1 by March 31, 2014	NRCan completed the writing of the update to the *2008 National Assessment – From Impacts to Adaptation: Canada in a Changing Climate*.

Performance Analysis and Lessons Learned

In 2013-14, NRCan focused on a broad range of hazards and risks that could negatively impact Canadians, the environment or infrastructure. To position stakeholders to respond to these risks, proactively and retroactively, NRCan provided expertise related to forest disturbances, adaptation risks and opportunities for communities and northern infrastructure, geohazards and public safety. The Department also supported the regulatory regime for explosives and certifications.

Through its participation in the Canadian Council of Forest Ministers (CCFM) and its associated working groups, NRCan collaborated with provincial and territorial governments to further characterize risks, vulnerabilities and impacts associated with forest disturbances of national significance while identifying opportunities for further integrating cross-country management and adaptation approaches. Specific examples of the work completed include an evaluation of past and current wildland fire trends in Canada to better understand likely future fire conditions under a changing climate along with resource needs and mitigation options, and the publication of a risk assessment of the threat of mountain pine beetle to Canada's boreal and eastern pine forests.

In addition, two new Adaptation Platform working groups were established in 2013-14—one on water and climate information, and the other on infrastructure and buildings—which will develop and improve access to information and tools to help manage risks from a changing climate. Working group participants include representatives from federal and provincial governments and professional organizations. Also related to climate change, NRCan completed

the update to the 2008 National Assessment – *Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation,* an update to the 2008 report, *From Impacts to Adaptation: Canada in a Changing Climate.*

Sub-Program 3.1.1: Explosives Safety and Security

Description

Explosives are essential for many economic activities but are inherently dangerous. Strict controls are needed to protect Canadians from incidents that could result in death, serious injury, and economic and environmental harm. This Sub-program administers and enforces the Explosives Act and regulations that govern the manufacture, importation, transportation, sale, distribution and storage of explosives, including fireworks and pyrotechnics, and the sale of materials that can be used to produce explosives. Explosives use falls primarily within provincial jurisdiction. Activities include compliance promotion, outreach, inspections, investigations and enforcement of the Act and Regulations, testing and development of policies, procedures, guidelines, rules and standards, based on risk. The Sub-program is delivered by headquarters and regional inspectors, supported by a laboratory, and also supplies expertise to other federal government departments and agencies and to other law enforcement agencies.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
5,069,393	5,695,103	625,710

The difference between Planned Spending and Actual Spending is mainly attributed to costs recoverable from Treasury Board. In addition, funding related to the operating budget carry forward and spending related to collective bargaining increases contributed to the variance.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
57	58	1

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Regulated establishments comply with regulatory requirements to protect Canadians from the	Percentage of explosives inspection reports rated satisfactory or better	70% or more by March 31, 2014	767 inspections were conducted with more than 70% of inspection reports in 2013-14 being rated satisfactory or

dangers of explosives			better.
Stricter controls are maintained by distributors on chemicals commonly used to make explosives (precursor chemicals)	Percentage of regulated precursor chemical distributors that provide documented evidence of the implementation of a voluntary Precursor Outreach Initiative (Precursor outreach initiative is the steps that the distributor will take to make stakeholders aware of the Restricted Components Regulations [e.g., distributing information sheets])	75% or more by March 31, 2015	NRCan is on track to meet the target as 4500 information sheets have been printed and are in the process of being distributed by regulated precursor chemical distributors.

Performance Analysis and Lessons Learned

NRCan continued to fulfill its responsibilities under the *Explosives Act* in 2013-14, meeting inspection targets and remaining on track to meet information distribution targets. Beyond the regular business of conducting inspections, disseminating information and performing scientific research related to explosives, the Explosives sub-program made significant progress during the year in two areas that will directly impact the safety and security of Canadians. First, NRCan made progress on a national inspection plan to reduce the amount of time inspectors spend travelling versus conducting inspections, which will allow the Department to increase the overall number of inspections. Second, a new set of regulations (the *Explosives Regulations, 2013*) came into force on February 1, 2014. These new *Regulations*, the result of many years of work, are clearer and reflect modern industrial explosives practices. The improvements will make it easier for stakeholders to comply with the *Regulations*, resulting in improved safety for citizens.

Sub-Program 3.1.2: Materials and Certification for Safety and Security

Description

Materials are engineered and fabricated for specific applications and environments. Defects in equipment or structures can cause failures that result in death, serious injury, and economic and environmental damages. Non-destructive testing helps to ensure the integrity of safety-critical components in aircraft, boilers and pressure vessels, bridges, buildings, cranes, heavy equipment, nuclear reactors, pipelines and other applications. Several federal regulators and other authorities require non-destructive testing to be performed by inspectors certified according to national standard CAN/CGSB-48.9712-2006, Qualification and Certification of Non-Destructive Testing Personnel. This Sub-program certifies individuals to this national standard. The standard and

certification procedures are aligned with requirements in international standard ISO 9712:2005 and European standard EN 473:2000. The Sub-program also assists other federal government departments and regulatory authorities to develop and implement certification programs and develops materials solutions to provide increased protection to Canadian Forces personnel and assets. The focus is to protect light military vehicles and occupants from the effects of improvised explosive devices, a weapon of choice for insurgents and unconventional forces, and to protect dismounted soldiers and law enforcement personnel against projectiles and fragmentation devices.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
1,385,150	(335,689)	(1,720,839)

The difference between Planned Spending and Actual Spending is mainly attributed to the expenditures that were originally planned for sub-program 3.1.2 Materials and Certification for Safety and Security but were subsequently spent in sub-program 2.2.1 Materials for Energy, and as a consequence, the vote netted revenue collected in this sub-program exceeded the actual spending due to the majority of expenses being incurred in sub-program 2.2.1 Materials for Energy and the revenue being collected in sub-program 3.1.2 Materials and Certification for Safety and Security.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
8	13	5

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Defence stakeholders adopt advanced materials solutions to protect light military vehicles and occupants from the effects of improvised explosive devices	Number of advanced materials solutions to which NRCan contributed that have been identified for adoption by defence stakeholders	1 over 3 years (by March 31, 2015)	A prototype composite personal armour material providing better strength and toughness (and therefore protection) has been produced and will go through extensive mechanical property evaluation over the next year.
Individuals are certified to perform non-destructive testing to a national standard	Number of individuals holding one or more valid certifications issued by NRCan	4800 by March 31, 2014	This target was exceeded as more than 5,400 individuals are currently holding valid certifications.

	Number of valid certifications issued by NRCan (certifications are currently offered in six methods and individuals are typically certified in more than one method and/or sector)	12000 by March 31, 2014	This target was exceeded as there are currently more than 13,300 valid non-destructive testing (NDT) certifications and 1461 X-Ray Fluorescent operator (XRF) certifications.

Performance Analysis and Lessons Learned

NRCan conducts certification in Non-Destructive Testing (NDT) for industry stakeholders. Achieving certification in NDT ensures that individuals are able to assess, in a consistent manner across the country, the properties of materials without destroying them. As this program is the only source of such NDT-certified personnel for all Canadian industries, and federal regulators such as Transport Canada, the National Energy Board, Health Canada, and the CNSC mandate NDT inspections by certified individuals, NRCan's programming enables environmental protection and health and safety benefits on a national scale by acting as an enabler for materials testing.

In 2013-14, NRCan met its NDT-related targets by issuing certifications to 5,432 individuals and ensuring that these individuals held a combined total of 13,389 NDT certifications. The NDT program exceeded targets for 2013-14 and also achieved successes communicating with stakeholders. Over the past year, NRCan established a more formal mechanism for engaging and consulting with the numerous stakeholders of the certification program. The long-term objective of this stakeholder communication strategy is to keep building positive participation and to maintain a healthy and robust committee structure to continually address the needs of the industry on a national scope, resulting in an NDT program characterized by greater transparency, dialogue, accountability, and responsiveness.

NRCan also achieved results in supporting the protection of Canadians through collaboration with National Defence and Defence Research and Development Canada (DRDC). Research and development collaborations with DRDC are leading to new armour materials that will provide enhanced protection of military assets and personnel. NRCan continued to use its world-class facilities for this and other materials research, leading to improvements in the fabrication, testing and evaluation of advanced materials for safety and security.

Sub-Program 3.1.3: Forest Disturbances Science and Application

Description

Climate change is widely believed to be contributing to an increase in the frequency and intensity of native and invasive alien forest pest infestations and other disturbances such as wildland fire. Canada needs the scientific knowledge to understand, forecast, mitigate and adapt to natural and human-induced impacts to forest ecosystems. Through this Sub-program, NRCan conducts research and analysis to develop scientific knowledge of forest disturbances (e.g., pests, fire). This scientific knowledge is used by federal, provincial and territorial governments and agencies (both policy-makers and regulators) as well as the forest industry to assess risks, forecast impacts and develop mitigation and adaptation strategies related to pests, fire, and climate change. This Sub-program includes the Invasive Alien Species Strategy for Canada, and Climate Change Adaptation Program.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
25,614,590	31,179,664	5,565,074

The difference between Planned Spending and Actual Spending is mainly attributed to costs recoverable from Treasury Board. In addition, the funding related to the operating budget carry forward, spending related to collective bargaining increases, and a change in priorities contributed to this variance.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
263	247	(16)

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Governments, agencies and industry are provided with scientific knowledge on forest disturbances to assess risks, and develop mitigation and adaptation strategies	Representation of the Canadian Forest Service on advisory boards or committees involving governments, industry, and non-governmental organizations in order to provide scientific knowledge on forest ecosystems	Maintain current representation on 73 advisory boards or committees, ongoing	NRCan representatives sat on 77 committees and boards in 2013-14, serving as subject matter experts, policy advisors, project coordinators and leaders, and editors of national and international peer-reviewed journals.

Performance Analysis and Lessons Learned

NRCan has expertise conducting research, and then disseminating that research through reports, websites and other fora to support stakeholders in managing risks and developing mitigation and adaptation strategies. In 2013-14, NRCan met its target by having Departmental representatives serve on 77 committees and boards as subject-matter experts, policy advisors, project co-ordinators and leaders, and editors of peer-reviewed journals.

NRCan presented information resources and workshops in 2013-14 on the mitigation of the emerging spruce budworm epidemic in Quebec and eastern Canada and risk analyses for the Canadian Council of Forest Ministers on spruce budworm and the mountain pine beetle. NRCan also led the development and certification of a new biological control product, Rotstop, to combat annosum root disease, a deadly disease caused by an exotic fungus that is threatening pine forests in eastern Canada. Regarding forest fires, NRCan delivered a National Burned Area Composite for historical fires within existing fire management platforms and processes, enhancing Canada's ability to estimate greenhouse gas emissions.

Sub-Program 3.1.4: Climate Change Adaptation

Description

Climate change poses a risk to Canadian businesses, communities and infrastructure, and collaboration across multi-jurisdictional areas is challenging. This sub-program supports collaboration amongst key regional stakeholders across Canada, including government departments and agencies, private sector and community organizations. These collaborations enable discussion on key adaptation issues and preparation of practical adaptation measures that will prepare for and take advantage of the risks and opportunities resulting from climate change. This sub-program also delivers scientific analysis on key climate change issues affecting Canada's North (North of 60 latitude). Overall, this sub-program helps Canada to better understand, make informed decisions and take practical actions to respond to a changing climate.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
10,914,269	9,404,543	(1,509,726)

The difference between Planned Spending and Actual Spending is attributed to the surplus in the Climate Change Impacts and Adaptation program, due to a reprofile of contribution funding from previous years, which resulted in a surplus as the program could not expend the funds on time. Other items affecting the variance include spending related to collective bargaining increases and costs recoverable from Treasury Board.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
34	37	3

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Governments and communities in the North (North of 60 latitude) are aware of information on adaptation measures	Number of projects (for design or implementation phases) considering climate change geoscience adaptation measures	4 by March 31, 2014	NRCan's climate change adaptation information was considered in design and implementation phases of projects managed by a wide variety of northern stakeholders, including twenty from federal, territorial, regional, and local governments and associations, two from the construction industry, two from geotechnical consultants, four from academia, and one from an international organization.
Key stakeholders across Canada consider climate change/adaptation issues in their decision-making	Percentage change in number of public or private sector decision-makers considering climate change in their planning	30% total increase over 2009-10 baseline of 13 decision makers, by March 31, 2015	The survey to document the change in this indicator is on track for delivery in 2014-15.

Performance Analysis and Lessons Learned

The research, expertise and knowledge products offered by NRCan on climate change adaptation will help those with responsibilities for adaptation better plan and undertake actions, reducing risks and ultimately costs. In 2013-14, a wide variety of northern stakeholders used NRCan's information, including twenty from federal, territorial, regional, and local governments and associations, two from the construction industry, two from geotechnical consultants, four from academia, and one from an international organization. For example, the Government of Northwest Territories and geotechnical consultants adopted scientific and technological developments for use in transportation route selection, the Government of Nunavut incorporated NRCan group displacement maps and geophysics results into the decision-making and planning

of their $300 million Iqaluit airport improvements, and more than 400 individuals and associations accessed coastal erosion and ice breakup brochures.

The National Climate Change Adaptation Platform itself grew to more than 200 members and 11 Working Groups whose projects delivered 43 new products in 2013-14. These included the review of 35 mining-related policies and programs in four provinces which identified barriers and enablers for adaptation actions in the mining sector and three case studies of adaptation actions in the mining sector. The Platform also hosted 4 webinars to facilitate the information exchange on topics such as a US utility's response to Hurricane Sandy. Through the Platform, NRCan invested $3.85 million which—when added to the more than $4 million from the public and private sectors—initiated 36 new cost-shared projects to help Canadians adapt to a changing climate.

NRCan developed partnerships with Aboriginal Affairs and Northern Development Canada-Beaufort Regional Environmental Assessment (BREA) and the Canada-Nunavut Geoscience Office, as recommended in a 2012 program evaluation.

Sub-Program 3.1.5: Geohazards and Public Safety

Description

To ensure that Canadians are protected from natural hazards constant monitoring and effective planning for adverse natural events are required. Such events include earthquakes, volcanic eruptions, landslides, geomagnetic storms, radiological and nuclear incidents, and tsunamis. The provision of hazard information and products helps other levels of government, including international government bodies, the private sector and professional organizations such as the Canadian Institute of Planners to prepare for and mitigate natural disasters. This work also meets NRCan’s obligation for ongoing nuclear test monitoring, as is required under the Comprehensive Nuclear Test Ban Treaty. This sub-program comprises of a research component that disseminates risk-related information to support the response, recovery and preparedness phases of emergency management.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
16,219,011	19,591,474	3,372,463

The difference between Planned Spending and Actual Spending is mainly attributed to the receipt of internal transfers in support of the Program of Energy Research and Development as well as the Strategy to Implement a World-Class Prevention Preparedness and Response Regime for Oil Spills from Ships Initiative. In addition, funding received through Supplementary Estimates related to the Canadian Safety and Security Program, spending related to collective bargaining increases; the operating budget carry forward, and costs recoverable from Treasury Board have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
93	114	21

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Other levels of government, private sector and professional organizations involved in emergency management in Canada rely on information from NRCan's hazard information services and hazard mitigation knowledge products for decision-making	Annual number of other levels of government, private sector or professional organizations involved in emergency management in Canada confirming level of use of NRCan information in decision-making	5 by March 31, 2014	Eight key stakeholders involved in emergency management (EM), including provincial departments and municipalities, utilized sub-program outputs to enhance their decision-making. For example, the provincial EM organizations of Manitoba, New Brunswick, and Quebec have been utilizing NRCan-developed tools and methodologies to evaluate flood risk and mitigation options within their jurisdictions.

Performance Analysis and Lessons Learned

In 2013-14, NRCan’s Earthquakes website served 301,000 requests and seismologists located 60 significant and/or felt earthquakes in Canada and posted information to web and social media. This sub-Program also delivered 4 new national-scale seismic hazard maps which have been recommended for adoption into the 2015 National Building Code.

NRCan’s leadership in the provision of emergency management information was used by eight key stakeholders to improve their decision-making. For example, the successful adoption by Hydro One of a Geomagnetically Induced Current (GIC) simulator highlighted the need for comprehensive understanding of the specifications and uniqueness of electrical distribution systems. This need has been recognized and NRCan’s experts worked in partnership with Manitoba Hydro toward strengthening the electrical distribution system in that jurisdiction. Meanwhile, NRCan supported the provincial emergency management organizations of Manitoba, New Brunswick and Quebec in using tools and methodologies to evaluate flood risks and mitigation options.

NRCan also built on its strong foundation of working with federal government partners, by strengthening collaboration and partnership with Public Safety Canada and by helping develop a National Disaster Mitigation Program, amongst others.

A 2013 evaluation of this sub-program indicated that NRCan was delivering federally mandated, valuable, relevant, quality products for emergency managers across the full spectrum of the emergency management cycle and in a manner that leveraged resources and the engagement of key emergency management clients and stakeholders. The recommendations identified in the evaluation are being reviewed and implemented.

Program 3.2: Landmass Information

Description

NRCan provides clearly-defined legal boundaries, a robust property system framework, authoritative geographic infrastructure and fundamental geospatial information on Canada's landmass, without which Canada's economy, environment, and standard of living would be negatively impacted. This program delivers Canada's regulatory system for Canada's Lands legal surveys, the fundamental geodetic reference system, earth observation and mapping information. Together, these support the Canadian public, other departments and levels of government, the private sector and academia to carry out a variety of decisions founded on location-based information, such as land transactions, commercial/industrial development, transportation and logistics. This fundamental information enables, effective management of Canada's natural resources and lands including opportunities for collaboration across jurisdictions (i.e. cross-border planning, regulatory efficiency), which advances the interests of Canada's natural resources sectors, both domestically and internationally.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
44,500,738	44,500,738	83,852,111	73,828,231	29,327,493

The difference between Planned Spending and Actual Spending is mainly attributed to budget reallocation. Expenditures planned for program 2.3 Responsible Natural Resource Management for the Revitalization of Antennas were subsequently spent in program 3.2 Landmass Information. In addition, funding received through Supplementary Estimates related to the United Nations Convention on the Law of the Sea, transfers from the Department of National Defence for the Polar Continental Shelf Program – Canadian Armed Forces Arctic Training Centre project; spending related to collective bargaining increases; the operating budget carry forward and costs recoverable from Treasury Board have increased actual spending. Slightly offsetting these increases is some funding originally planned for program 3.2 Landmass Information being subsequently spent in Internal Services.

Human Resources (Full-Time Equivalents [FTEs])

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
461	394	(67)

The difference between Planned FTEs and Actual FTEs relates to an FTE re-allocation which moved FTEs that were planned for program 3.2 Landmass Information to various other programs, such as 2.3 Responsible Natural Resource Management, as well as several unplanned staffing departures and ongoing staffing processes that have not been completed.

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Public, private sectors and academia use accurate, Government of Canada geo-information for decision-making	Number of public, private sector, governments and academia that use NRCan information for decision-making	6 large federal departments, 5 private sector agencies, 3 Canadian universities by March 31, 2014	NRCan met its target through federal departments, private sector agencies and Canadian universities using NRCan geo-information for decision-making.
	Percentage of clients who are satisfied with Canada's legal boundary framework for effective governance, economic and social development	Positive trend on bi-annual client satisfaction surveys (rotational amongst key client groups: Aboriginal, other government departments, industry)- Baseline years ending 2013-14, by March 31, 2015	A questionnaire for Canada Lands Surveyors was incorporated into the 2013-14 evaluation of the Canada's Legal Boundaries Program; findings reported a general level of satisfaction.

Performance Analysis and Lessons Learned

In 2013-14, NRCan produced essential geographic information such as maps, provided expertise on Canada’s legal boundaries, and provided coordinated logistical support in the North through its sub-programs. These activities enabled stakeholders to make informed decisions on the management of Canada’s lands and natural resources and to mitigate related risks.

NRCan met its target of information dissemination for decision-making in 2013-14. A myriad of organizations, including industry, academia and other governments in Canada and federal departments, drew on NRCan geographic expertise to make decisions. For example, Public Safety Canada made flood maps and Parks Canada determined ecosystem integrity of National Parks. Although satisfaction levels related to NRCan’s efforts through this program cannot be easily determined, the findings of a 2013 evaluation reported a continuing need for the program and a general level of satisfaction amongst stakeholders.

Sub-Program 3.2.1: Essential Geographic Information

Description

Many socio-economic and environmental decisions, such as land-use, elections planning, emergency preparedness and response, transportation and real estate, would generate inconsistency, disputes or turmoil without authoritative geographic information. This Sub-program delivers Canada's fundamental geodetic reference system, remote sensing technologies and authoritative mapping, earth observation and other location-based products and solutions. NRCan's policies, infrastructure and products support a variety of socio-economic and environmental decision-making carried out by other departments and levels of government, private sector and academia as well as the public necessary for effective management of Canada's natural resources and lands.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
22,587,498	49,678,759	27,091,261

The difference between Planned Spending and Actual Spending is mainly attributed to budget reallocation. Expenditures planned for sub-program 2.3.5 Earth Observation for the Revitalization of Antennas were subsequently spent in sub-program 3.2.1 Essential Geographic Information. In addition, funding received through Supplementary Estimates related to the United Nations Convention on the Law of the Sea; spending related to collective bargaining increases, the operating budget carry forward and costs recoverable from Treasury Board have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
317	253	(64)

The difference between Planned FTEs and Actual FTEs relates to an FTE re-allocation which moved FTEs that were planned for sub-program 3.2.1 Essential Geographic Information to various other sub-programs, such as 2.3.5 Earth Observation for Responsible Development of Natural Resources.

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Public, private sector and academia access geographic/geospatial information for the management of natural resources and lands	Number of downloads for geographic and geospatial information (geo-information)	5% increase over 2010-11 baseline of 5,495,869 downloads, by March 31, 2014	For fiscal year 2013-14, files downloaded from the GeoGratis and GeoBase sites increased to a total of 7,056,376, up from the baseline number of 5,495,869 set in 2010-11. This represents an increase of approximately 28% over

			the last 3 years, or 9% per year, on average. In addition to downloads, NRCan delivers dynamic geospatial information through its Precise Point Positioning (PPP) service, which served 6751 clients, a 30% increase over the number of clients served in the 2010-11 baseline year.

Performance Analysis and Lessons Learned

NRCan's geographic and geospatial information continued to be accessed and used by the public, private sector and academia in 2013-14, exceeding targets. For example, the number of clients who used NRCan's online Precise Point Positioning (PPP) service, which relays specific, centimetre-level positioning data, increased by 30% from 2010-11 to 2013-14. The service was used primarily by industry and academia for land surveying, engineering, natural resources and geospatial projects and to support research and development. Other geographic resources run by NRCan, GeoGratis and GeoBase, also exceeded their download targets. In addition to managing and acquiring new data sets, NRCan completed work on redesigning data production activities to support the implementation of the Federal Geospatial Platform (FGP). It also built key software and systems components for the FGP, such as a spatially referenced database.

NRCan's Earth Observation satellite revitalization project is on track, on budget and on time, and significant milestones have been met: the first of four antennas is already in operation (Saskatchewan), a second one is almost completed (Quebec), and the remaining milestones are on track. The initial expansion of the earth observation infrastructure in Inuvik (Northwest Territories) has received positive support from all stakeholders, including the local government. In addition, the facility has attracted interest from national and international satellite service providers, and could become a major satellite destination. As such, NRCan is looking to advance its business operations and partnerships with the international community, building a more robust governance structure going forward through implementation of lessons learned.

Through this sub-program, NRCan also supported Canada's work to achieve international recognition of an extended continental shelf in accordance with the United Nations Convention on the Law of the Sea. NRCan achieved its target for the Atlantic component of the submission, outlining an extended continental shelf for the Atlantic of 1.2 million km^2 (about the size of Ontario). This partial submission is important, as it is a key step in achieving international recognition for Canada's extended continental shelf. The Arctic component was completed in

draft form; additional scientific data in the vicinity of the North Pole will be acquired with the intent to file, at a later date, a partial submission for the Arctic Ocean, including the North Pole.

Sub-Program 3.2.2: Canada’s Legal Boundaries

Description

Boundary uncertainty undermines public confidence in the property rights system and is a barrier to exercising property and sovereign rights, as well as responsible social and economic development. For the benefit of all Canadians, this Sub-program ensures boundary certainty through: a) the proper maintenance of the Canada/US international boundary for law enforcement, land administration, customs and immigration, and trans-boundary resource management; b) effective boundary surveys of Aboriginal settlement lands to meet Canada's obligations under land claim settlement legislation and treaties; and c) statutory registration of legal surveys on Canada Lands (the North, Canada's offshore area, Aboriginal Lands and National Parks), essential to the creation of property parcels. The boundary certainty provided by this Sub-program promotes public confidence, enables effective management of Canada lands and collaboration across jurisdictions, which advances the interests of Canada`s natural resources sectors, both domestically and internationally.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
14,558,397	14,613,585	55,188

The difference between Planned Spending and Actual Spending is mainly attributed to a surplus as a result of delays in staffing actions and resultant delays in Northern relocations, offset by funding related to the operating budget carry forward and spending related to collective bargaining increases, as well as costs recoverable from Treasury Board, which have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
123	114	(9)

The difference between Planned FTEs and Actual FTEs relates to several unplanned staffing departures and ongoing staffing processes which have not been completed.

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Statutory obligations, including interdepartmental commitments, are achieved in support of boundary certainty for Canada (including the Canada-US boundary) and First Nations Lands	Percentage (cumulative) of International Boundary Maintenance Canada-US obligations on joint plan that are achieved	55% (over 15 years), by March 31, 2014	The joint annual work plan as negotiated by the Canadian and US Sections of the International Boundary Commission was delivered in support of the 15 year boundary maintenance cycle. For the Canadian Section, 559 km were inspected, 455 monuments maintained, 87.7 km cleared and 239 stations surveyed.
	Percentage of statutory obligations and interdepartmental commitments achieved as defined in the legislation and agreements for Canada and First Nation lands	100% achieved per Surveyor General Branch's annual plan, by March 31, 2014	The annual survey obligations were met for both the Tlicho and Yukon Comprehensive Land Claim agreements as planned for the fiscal year. Survey related work set out in 37 Interdepartmental Agreements with other government departments was completed. Results include 6,687 cadastral parcels created in the cadastral database.

Performance Analysis and Lessons Learned

NRCan contributed to maintaining the integrity of Canada’s boundaries, in accordance with statutory obligations and interdepartmental commitments. For example, NRCan continued to survey Canadian lands, including First Nations land, as part of land claims, in 2013-14. As well, it met all of the Department’s annual survey obligations for both the Tlicho and Yukon Comprehensive Land Claim agreements. Canada’s partnership with the United States through the International Boundary Commission and that organization’s maintenance plan also yielded results that kept NRCan on track to meet its targets for maintaining boundary markers, inspecting the border and stations, and clearing overgrown sections. This contributed to the confidence of Canadians and natural resource companies in property rights.

Related to Canada's Legal Boundaries program, NRCan completed a two year re-engineering and modernization exercise. The exercise included relocation of its northern plan review and digital data management processes to Edmonton and Ottawa in accordance with Budget 2012. This was undertaken to expedite modernization of the survey system, ensure relevance and create operational efficiencies. However, the Department retained the regional program delivery structure to continue to provide front line services to Canadians and the regional presence effectively contributed to the success of meeting obligations.

Sub-Program 3.2.3: Polar Continental Shelf Logistics Support

Description

Due to the remoteness, harsh weather, and high cost of working in Canada's Arctic and Sub-arctic regions, there is a need to provide safe, efficient and cost-effective field logistics support to researchers throughout these regions. As a national service delivery organization, Polar Continental Shelf Program (PCSP) coordinates logistics for Canadian government agencies, provincial, territorial and northern organizations, universities and independent groups conducting research, in Canada's North. Through this work, the PCSP contributes directly to the exercise of Canadian Arctic sovereignty. PCSP services include air transportation to and from remote field camps, field equipment and vehicles, and fuel for aircraft, equipment and camps. PCSP also provides meals, accommodations and working space (including a multi-purpose laboratory) at its facility in Resolute, NU and a communications network that links the PCSP with the science teams in field camps.

Budgetary Financial Resources (dollars)

2013-14 Planned Spending	2013-14 Actual Spending	2013-14 Difference (actual minus planned)
7,354,843	9,535,887	2,181,044

The difference between Planned Spending and Actual Spending is mainly attributed to the funding received through Supplementary Estimates related to transfers from the Department of National Defence for the Polar Continental Shelf Program – Canadian Armed Forces Arctic Training Centre project, the operating budget carry forward, and spending related to collective bargaining increases. Furthermore, costs recoverable from Treasury Board have increased actual spending.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
21	27	6

Performance Results

Expected Results	Performance Indicators	Targets	Actual Results
Polar Continental Shelf Program clients receive cost-effective field logistics support	Percentage of eligible projects receiving sufficient PCSP support to proceed with their field work	95% by March 31, 2014	The Polar Continental Shelf Program had prioritized and supported 273 of the 323 eligible project requests received. Another 29 projects were cancelled, leaving only 21 projects unsupported. Therefore 273 out of the 294 or 93% of the projects were supported.

Performance Analysis and Lessons Learned

Through the Polar Continental Shelf Program, NRCan provided vital logistics support to government departments and agencies, academia and other stakeholder groups conducting science in Canada's North. In 2013-14, NRCan was able to support 93% of all project requests it had received, providing safe, efficient and cost-effective logistics services in support of science and Government priorities.

During the 2013 field season, NRCan supported 129 science projects in the Arctic requiring field logistics support. The Department provided 3,355 person-days of accommodation for scientists at its facility in Resolute, Nunavut, and supported 155 projects with field equipment across Canada through its Technical Field Support Services unit. NRCan also helped Canada exert its sovereignty by supporting eight projects and providing 5,390 person-days of accommodation for National Defence Arctic training projects.

The Department implemented improvements to its business processes in line with an internal audit of the PCSP completed in 2013. These improvements are part of NRCan's work to have its PCSP work recognized, both domestically and internationally, as Canada's Centre of Excellence for logistics support over the Canadian land mass with a strong emphasis on contributing to the performance of science and the exercise of sovereignty in the Canadian North. The improvements will also enable NRCan to provide turn-key logistics solutions to the Geo-mapping for Energy and Minerals (GEM-2) program and the Canadian High Arctic Research Station's science and technology program.

Internal Services

Description

Internal Services are groups of related activities and resources that are administered to support the needs of programs and other corporate obligations of an organization. These groups 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; Acquisition Services; and Other Administrative Services. Internal Services include only those activities and resources that apply across an organization and not to those provided specifically to a program.

Budgetary Financial Resources (dollars)

2013-14 Main Estimates	2013-14 Planned Spending	2013-14 Total Authorities Available for Use	2013-14 Actual Spending (authorities used)	2013-14 Difference (actual minus planned)
155,810,360	155,861,957	198,477,192	184,198,094	28,336,137

The difference between Planned Spending and Actual Spending is mainly attributed to the funding received through Supplementary Estimates related to the Government Advertising Campaign, the Stakeholder Engagement and Outreach Campaign, the Port Hope Area Initiative, the Geo-Mapping for Energy and Minerals project, and the United Nations Convention on the Law of the Sea, as well as for the operating budget carry forward and spending related to collective bargaining increases. In addition, spending originally planned for other programs that was subsequently spent in Internal Services, as well as costs recoverable from Treasury Board, have increased actual spending. Offsetting these increases in funding are surpluses in corporate areas as well as a return of funds to the Privy Council Office for the Government Advertising program.

Human Resources (FTEs)

2013-14 Planned	2013-14 Actual	2013-14 Difference (actual minus planned)
1,069	1,029	(40)

The difference between Planned FTEs and Actual FTEs relates to the continued efforts to reduce personnel through attrition.

Performance Analysis and Lessons Learned

Responding to its operating context, best practices observed in other departments, central agency directives and requirements, and internal innovations to process, NRCan achieved numerous significant milestones in 2013-14.

NRCan streamlined its people management processes and made them more effective. For example, it achieved all Treasury Board Secretariat-required deliverables for the Common Human Resources Business Process ahead of the scheduled deadline of March 31, 2014, allowing for a standardized and integrated approach to human resources. Regarding its codes and action plans, NRCan made progress on implementing its new Values and Ethics Code, and

fulfilling actions identified in its Official Languages and Employment Equity action plans. NRCan also continued efforts related to performance and talent management, leadership development and strengthening management capacity.

NRCan met several milestones related to information and document management processes and tools in 2013-14. These included the launch of the new consolidated Departmental website, which replaced the existing collection of branch, sector and corporate websites. The new, smaller web presence allows for enhanced navigation and usability in accordance with the Standard on Web Usability. The Department completed some of its information management-related priorities. Key milestones related to the GCDOCS document management tool were completed in 2013-14, including the development and establishment of the GCDOCS environment, functional testing, development of the departmental information architecture, completion of pilots, resolution of some system performance issues, and partial implementation in some of NRCan's organizational units.

Finally, the Departmental Investment Plan was approved by the Treasury Board in September 2013. The Plan will allow for strategic capital investments to be made to its cross-Canada scientific and office facilities. NRCan also began work to streamline the implementation of investment planning and reporting.

Section III: Supplementary Information

Financial Statements Highlights

The financial highlights are intended to provide a general overview of the Department's financial position and the net cost of operations before government funding and transfers. The financial highlights presented in this section are drawn from Natural Resources Canada's financial statements and have been prepared in accordance with Treasury Board accounting policies, which are based on Canadian public sector accounting standards.

Natural Resources Canada
Condensed Statement of Operations and Departmental Net Financial Position
(unaudited)
For the Year Ended March 31, 2014
(dollars)

	2013-14 Planned Results	2013-14 Actual	2012-13 Actual	Difference (2013-14 actual minus 2013-14 planned)	Difference (2013-14 actual minus 2012-13 actual)
Total expenses	2,763,895,482	2,050,897,311	1,963,878,803	(712,998,171)	87,018,508
Total revenues	35,770,000	29,222,000	25,969,583	(6,548,000)	3,252,417
Net cost of operations before government funding and transfers	**2,728,125,482**	**2,021,675,311**	**1,937,909,220**	**(706,450,171)**	**83,766,091**
Departmental net financial position	**(850,529,552)**	**(924,034,291)**	**(1,060,268,994)**	**(73,504,739)**	**136,234,703**

Total expenses were $1.964 billion in 2012-13 compared to $2.051 billion in 2013-14 for a net increase of $87 million or 4.4% which is mainly attributable to transfer payments.

- The net increase in transfer payments of $99 million (from $1.074 billion in 2012-13 to $1.173 billion in 2013-14) is mainly attributable to:
    - a $151 million increase in payments to other levels of government from 2012-13 to 2013-14 mainly due to the Newfoundland Offshore Petroleum Resource Revenue Fund ($165 million) and to the Nova Scotia Offshore Revenue Account (-$11 million). The variance in Royalties collected and paid to the Newfoundland Offshore Petroleum Resource Revenue Fund and to the Nova Scotia Offshore Revenue Account is, from year to year, entirely a function of factors such as production levels, commodity prices and operators' costs.

    - a $31 million decrease in payments to industry from 2012-13 to 2013-14 mainly due to the expensing of outstanding G&C advances ($36 million) in 2012-13 following the adoption of the new Public Sector Accounting Standard 3410 on Government Transfers.
    - a $48 million decrease in payments to non-profit organizations from 2012-13 to 2013-14 mainly due to the expensing of outstanding G&C advances ($45 million) in 2012-13 following the adoption of the new Public Sector Accounting Standard 3410 on Government Transfers.
    - a $29 million increase under payments to individuals due to a negative expense in 2012-13 resulting mainly from the revaluation of payables at year-end.
- The operating expenses have slightly decreased by $13 million or 1% between 2012-13 and 2013-14 (respectively $890 million and $877 million).

The revenues have slightly increased from 2012-13 ($26 million) to 2013-14 ($29 million). The planned revenues were based on historical data.

The planned results presented are derived from the amounts presented in the 2013-14 future-oriented statement of operations and included in the 2013-14 Departmental Report on Plans and Priorities. The planned results were based on several assumptions and information known at that time.

The overall difference in the total expenses between the 2013-14 actual ($2,051 million) and the 2013-14 planned results ($2,764 million) for 2013-14 represents $713 million or 26% of overestimated expenses. This is mainly attributable to:

- a $421 million variance in Atlantic Offshore Statutory Programs, which vary due to factors such as productions levels, commodity prices and operators' costs.
- a $239 million variance under Energy-Efficient Practices and Lower-Carbon Energy Sources due in most part to surpluses of $56.3 million in ecoENERGY for Biofuels program, $50 million in Grant to the Canada Foundation for Sustainable Development Technology, $7.1 million in ecoENERGY for Renewable Power and $100 million overestimation of planned expenditures calculated for the Future Oriented Financial Statements based on spending patterns that have changed over time.
- an $80 million variance under Responsible Natural Resource Management mainly due to a decrease in the environmental liabilities.

Natural Resources Canada
Condensed Statement of Financial Position (unaudited)
As at March 31, 2014
(dollars)

	2013-14	2012-13	Difference (2013-14 minus 2012-13)
Total net liabilities	1,679,609,461	1,769,476,753	(89,867,292)
Total net financial assets	492,475,117	461,626,164	30,848,953
Departmental net debt	**1,187,134,344**	**1,307,850,589**	**(120,716,245)**
Total non-financial assets	263,100,053	247,581,595	15,518,458
Departmental net financial position	**(924,034,291)**	**(1,060,268,994)**	**136,234,703**

Total net liabilities have varied from $1.769 billion in 2012-13 to $1.680 billion in 2013-14 resulting in a net decrease of $89 million or 5%. This $89 million variance is mainly attributable to:

- decrease of $17 million in accounts payable and accrued liabilities;
- increase of $5 million in vacation pay and compensatory leave;
- decrease of $48 million in the environmental liabilities; and
- decrease of $30 million of the employee future benefits, mainly due to the elimination of severance pay for certain groups of government employees.

Total net financial assets have increased by $30 million or 6% (from $462 million in 2012-13 to $492 million in 2013-14). The increase is mainly attributable to the increase in the account Due from Consolidated Revenue Fund (CRF) of $33 million, which represents the net amount of cash the Department is entitled to draw from the CRF without further appropriations. The increase is mainly due to a timing difference for payments in transition at year-end.

The overall change in total net liabilities and total net financial assets are then reflected in the Departmental net debt.

Total non-financial assets, which include prepayments, inventory and tangible capital assets varied from $248 million in 2012-13 to $263 million in 2013-14, resulting in a net increase of $15 million. This variance is mainly due to the increase of $15 million in tangible capital assets.

The total non-financial assets are then subtracted from the Departmental net debt to reflect the Departmental net financial position.

Financial Statements

Natural Resource Canada's financial statements are available online at: http://www.nrcan.gc.ca/plans-performance-reports/197.

Supplementary Information Tables

The supplementary information tables listed in the *2013-14 Departmental Performance Report* can be found on Natural Resources Canada's website[xiv].

- Departmental Sustainable Development Strategy;
- Details on Transfer Payment Programs;
- Horizontal Initiatives;
- Internal Audits and Evaluations;
- Response to Parliamentary Committees and External Audits;
- Sources of Respendable and Non-Respendable Revenue;
- Status Report on Transformational and Major Crown Projects;
- Status Report on Projects Operating With Specific Treasury Board Approval;
- Up-Front Multi-Year Funding; and
- User Fees Reporting.

Tax Expenditures and Evaluations

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 annually in the *Tax Expenditures and Evaluations*[xv] publication. The tax measures presented in the *Tax Expenditures and Evaluations* publication are the sole responsibility of the Minister of Finance.

Section IV: Organizational Contact Information

Jennifer Hollington, Director General

Appendix: Definitions

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

budgetary expenditures: Include operating and capital expenditures; transfer payments to other levels of government, organizations or individuals; and payments to Crown corporations.

Departmental Performance Report: Reports on an appropriated organization's actual accomplishments against the plans, priorities and expected results set out in the corresponding Reports on Plans and Priorities. These reports are tabled in Parliament in the fall.

full-time equivalent: Is 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.

Government of Canada outcomes: A set of 16 high-level objectives defined for the government as a whole, grouped in four spending areas: economic affairs, social affairs, international affairs and government affairs.

Management, Resources and Results Structure: A comprehensive framework that consists of an organization's inventory of programs, resources, results, performance indicators and governance information. Programs and results are depicted in their hierarchical relationship to each other and to the Strategic Outcome(s) to which they contribute. The Management, Resources and Results Structure is developed from the Program Alignment Architecture.

non-budgetary expenditures: Include net outlays and receipts related to loans, investments and advances, which change the composition of the financial assets of the Government of Canada.

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

planned spending: For Reports on Plans and Priorities (RPPs) and Departmental Performance Reports (DPRs), planned spending refers to those amounts that receive Treasury Board approval by February 1. Therefore, planned spending may include amounts incremental to planned expenditures 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 RPPs and DPRs.

plans: 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.

priorities: Plans or projects 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 Strategic Outcome(s).

program: A group of related resource inputs and activities that are managed to meet specific needs and to achieve intended results and that are treated as a budgetary unit.

results: 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.

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

Report on Plans and Priorities: Provides information on the plans and expected performance of appropriated organizations over a three-year period. These reports are tabled in Parliament each spring.

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

sunset program: 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: 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.

whole-of-government framework: Maps the financial contributions of federal organizations receiving appropriations by aligning their Programs to a set of 16 government-wide, high-level outcome areas, grouped under four spending areas.

Endnotes

[i] http://www.aecl.ca/en/home/default.aspx

[ii] http://www.neb.gc.ca/clf-nsi/rcmmn/hm-eng.html

[iii] http://www.cnsc-ccsn.gc.ca/eng/

[iv] http://www.cnlopb.nl.ca/

[v] http://www.cnsopb.ns.ca/

[vi] http://npa.gc.ca/home

[vii] http://www.sdtc.ca/index.php?page=home&hl=en_CA

[viii] http://laws-lois.justice.gc.ca/eng/acts/N-20.8/

[ix] http://laws-lois.justice.gc.ca/eng/acts/F-30/

[x] http://laws-lois.justice.gc.ca/eng/acts/R-7/

[xi] Whole-of-government framework, http://www.tbs-sct.gc.ca/ppg-cpr/frame-cadre-eng.aspx

[xii] *Public Accounts of Canada 2014*, http://www.tpsgc-pwgsc.gc.ca/recgen/cpc-pac/index-eng.html

[xiii] NRCan Publications and Reports, http://www.nrcan.gc.ca/publications/1138

[xiv] Departmental Performance Report – Supplementary Tables, http://www.nrcan.gc.ca/plans-performance-reports/197

[xv] *Tax Expenditures and Evaluations* publication, http://www.fin.gc.ca/purl/taxexp-eng.asp