



Natural Resources
Canada

Ressources naturelles
Canada



INTEGRATED BUSINESS PLAN 2010-2013



Canada



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MESSAGE FROM THE DEPUTY MINISTER AND THE ASSOCIATE DEPUTY MINISTER

We are pleased to present Natural Resources Canada's (NRCan) first Integrated Business Plan.

This plan represents a significant milestone in our commitment to build an NRCan that is strong, focused and relevant, helping to create a sustainable resource future for Canadians. Our department recognizes that in the 21st century, successful natural resource development is being defined differently than in the past. Our plan is positioning us for this future, reflecting the emergence of a new competitiveness model that combines the economic imperatives of sound business drivers and improved productivity along with environmental leadership and corporate social responsibility.

Our Integrated Business Plan also shows how NRCan is sharpening its focus and setting priorities that respond to the demands of this new global competitiveness model and address issues that are important to Canadians. We are advancing Canada's [clean energy](#) agenda and working to enable competitive resource sectors. We are furthering sustainable resource development in the North, improving the performance of the regulatory system for major project reviews, and managing nuclear issues in the interests of all Canadians.

Through our commitment to [renewal](#), NRCan's ability to deliver on its priorities is stronger than ever. We have developed a [Strategic Framework](#) that recognizes the importance of natural resources to Canada and tells us where, why and how we should focus as a department. We have become more integrated, bringing science and policy together and speaking with one voice to better effect change in Canada's natural resources sector. And through [collective leadership](#), we are achieving together that which we cannot do alone.

Our renewal does not end there. We are reshaping our roles to better position Canada as a new kind of global resource leader. NRCan will pioneer geographic and knowledge frontiers, drive the national S&T agenda



Cassie J. Doyle



Malcolm Brown

for natural resources, and pursue partnerships that are both priority-driven and results-focused.

The Integrated Business Plan showcases our progress. It shows how the department comes together, integrating its programs, activities, and resources to deliver on its priorities. Most importantly, it shows that our people, through their expertise, competencies, and commitment, are at the centre of our success as a department.

Now more than ever, NRCan can expect to be at the forefront of the issues of the day. We will use our Integrated Business Plan to help us manage for meaningful results, informing ourselves on where we are succeeding and where we will need to do more. We encourage you to read it and see how your work and the work of your colleagues is moving NRCan forward, building the future of our country and making a difference in the lives of Canadians.

Cassie J. Doyle
Deputy Minister

Malcolm Brown
Associate Deputy Minister

ABOUT THIS DOCUMENT

WHAT THIS DOCUMENT IS...

The Integrated Business Plan (IBP) provides a roadmap of how NRCan is working to achieve its vision and how activities support departmental priorities. In short, it tells us what we are doing, why and how.

Specifically, the document identifies NRCan's five key priorities that are central to delivering on our mandate and vision, and sets out the corresponding program activities, business objectives and expected results for the coming three-year period of 2010-13. This is complemented through the integration of information on how we are well-positioned to deliver on these initiatives through our people, physical and information assets, as well as finances.

Looking ahead, the IBP will be used to gauge how well we are achieving what we set out to do, allow for an in-year review of plans and possible mid-course correction, and help us make the right investments for the future.

...AND WHAT YOU CAN GET FROM IT

This document allows employees to better understand what NRCan does and how its range of activities supports the department in delivering on its mandate and the [Government of Canada's agenda](#). Together, NRCan employees are helping create a sustainable resource advantage for Canadians.

In addition, the Integrated Business Plan allows stakeholders and others interested in natural resources to better understand what NRCan is doing and why. It explains NRCan's priorities and overall contribution to Canada's natural resource agenda, thereby helping stakeholders to discover departmental activities relevant to their roles and responsibilities and to identify areas of mutual interest and possible engagement with the department.

To help us achieve our objectives for this important document, we invite your feedback. You can use the form on the last page to let us know what you think.

How the IBP is Organized

The IBP is organized into four sections:

"Who We Are and What We Do" outlines the department's roles and responsibilities.

The "Operating Context" describes NRCan's external and internal environment and the steps taken to prepare us for the future.

"Our Business Strategy" describes how we are contributing to and aligning ourselves with the government's agenda, what our priorities are, and how we do and structure our business.

"Our Business by Strategic Outcomes" describes our program activities, how we deliver on them and our priorities, and how we will measure success.

EXECUTIVE SUMMARY

NRCan's new Integrated Business Plan represents a significant milestone in our ongoing renewal and commitment to ensuring that we are strong, focused and relevant, contributing to a clean and prosperous Canada, now and in the future. It provides a roadmap of how we are working to achieve our mandate, how our activities support departmental priorities and how our priorities are aligned to the Government of Canada's (GoC) agenda. In short, it tells us what the department is doing, how and why.

Through our programs and services, and the implementation of targeted *Economic Action Plan* initiatives, we have supported the resource industries and workers throughout a severe economic downturn. The industry's recovery and Canada's success going forward depend on the strength of global demand and our ability to help sustain longer term growth through environmental and social responsibility. Industry leaders have already embraced that reality; and we can help with our expertise and research capacity. We are, in fact, well-positioned to do this: in recent years, our expertise and capacity have often been leveraged to deliver on the government's agenda.

Going forward, we will work to advance a competitiveness model where commitment to environmental leadership and corporate social responsibility – both domestically and internationally – are essential dimensions of economic success. We will achieve this through our priorities:

- Improving the performance of the regulatory system for project reviews
- Competitive resource sectors
- Clean energy
- Managing nuclear issues
- Sustainable resource development in the North

We will succeed at delivering on our mandate and priorities by continuing to optimize the potential of our resources: our people, physical and information assets, and finances.

WHO WE ARE AND WHAT WE DO

OUR NRCAN VISION – IMPROVING THE QUALITY OF LIFE OF CANADIANS BY CREATING A SUSTAINABLE RESOURCE ADVANTAGE

NRCan is the primary federal partner for the provinces and territories, industry and other domestic and international players in shaping Canada’s resource future. The department works toward outcomes supportive of economic competitiveness, environmental responsibility, the safety and security of Canadians, and the stewardship of natural resources. It strives to ensure that economic development is being achieved in ways that are commensurate with Canadians’ expectations for a prosperous, sustainable industry and a clean, healthy environment. And NRCan supports some of the most basic safety and security obligations a country owes to its citizens by developing knowledge and expertise on Canada’s vast and diverse landmass (e.g. borders, natural disasters, and hazards).

To deliver on its responsibilities, NRCan relies on a number of tools. It uses science and technology (S&T) to help address priorities, such as: supporting Canada’s submission to extend our continental shelf, pursuant to the [United Nations Convention on the Law of the Sea \(UNCLOS\)](#); facilitating the development of more fuel-efficient cars through materials research; and increasing energy efficiency for industry and individuals. NRCan develops policies

and programs that help create a sustainable resource advantage, supporting strong, competitive natural resource sectors that are environmentally and socially responsible. And it uses partnerships to help drive progress on the major issues, such as the deployment of carbon capture and storage technology.

NRCan’s 4,500 employees – scientists, engineers, economists, program experts, policy advisors and enabling administrators – are passionate and committed to their work and the vision they share: improving the quality of life for Canadians by creating a sustainable resource advantage.

OPERATING CONTEXT

NRCan's success relies on a comprehensive understanding of its internal and external environments, and on leveraging the opportunities and meeting the challenges that arise from them.

EXTERNAL ENVIRONMENT

Economic Context

Canada is now emerging from one of the deepest economic downturns in the past 50 years. Already, the Canadian economy

has experienced a modest expansion, with continued growth expected throughout 2010. Although they still remain below their pre-recession levels, the prices of commodities are rebounding. Looking ahead, the

[International Monetary Fund](#) projects that Canada's economic growth will be at 2.6% for 2011 and global economic growth will average 4.1% over the 2010-13 period, taking into account significant growth in emerging economies such as China and India that are leading the recovery.

The prosperity of the natural resource sectors matters for Canadians. In 2008 these sectors contributed:

- 12% of Canada's GDP;
- 53% of Canada's total exports; and
- 850,000 jobs in regional communities outside large cities.

Encouraging economic prospects are due, in large part, to the successful monetary and fiscal policies implemented by Canada and other like-minded countries. The federal government is contributing to Canada's recovery and long-term economic success through the [Economic Action Plan \(EAP\)](#) – a combination of timely and targeted stimulus measures to help communities, businesses and workers, along with important, long-term investments in Canada's economic future.

NRCan and Canada's Economic Action Plan (EAP)

NRCan is delivering short-term economic stimulus through initiatives such as the [ecoENERGY Retrofit for Homes Program](#), which will improve the efficiency of over 500,000 homes, supporting jobs in the home renovation industry and reducing both the long-term energy costs for homeowners and residential greenhouse gas emissions. The department is also supporting the federal Economic Development Agencies that are delivering the \$1-billion [Community Adjustment Fund](#) to create employment opportunities in communities affected by the economic downturn, including those that are resource-dependent. For more details on the EAP, see Annex C.

The government understands that it cannot be complacent and is committed to completing the implementation of its stimulus package, while returning to balanced budgets as early as conditions allow. The revival in the U.S. economy and continued growth in the value of Canadian exports will play an important role in the sustainable recovery of the Canadian economy. Higher commodity prices are, and will continue to be, an important factor stimulating domestic demand by increasing the value of our exports and pushing up the value of the Canadian dollar. And natural resources, which account for around half of Canada's merchandise exports, will play a key role in establishing a positive trade balance with the rest of the world.

Environmental Responsibility Has Become an Economic Imperative

NRCan's vision is to improve the quality of life of Canadians by helping to create a sustainable resource advantage. Its aim is to position Canada as a clean resource leader globally. Underpinning this objective is the premise that access to natural resources, including the sustainable ways that they are harnessed and used, has emerged as a core source of competitive advantage among nations.

In the 21st century, natural resources are being defined in ways that are different from the past. This suggests a future of

Shift in paradigm

For years, economic growth and environmental responsibility were perceived as being antagonistic. A number of factors, including growing public interest in the environment and technological advances, have led to a shift in this paradigm. In years to come, Canada's economic success will depend on environmental leadership and social licence to enable sustainable, resource-driven growth.

price volatility for commodities, higher costs for industry and consumers, intense global competition, complex environmental and social challenges, and new economic opportunities. It amplifies the need for Canada to advance a competitiveness model that facilitates sustainable, resource-driven growth. This is a model that combines the economic imperatives of a sound business climate and improving productivity with the need to show environmental leadership and corporate social responsibility. In short, it is about harnessing the full value of Canada's assets – its vast resource base, its systems (such as regulation and infrastructure), and its people and ideas – to build a stronger, more resilient resource economy now and in the future.

Canada's leading resource companies are already embracing the reality of a new competitiveness model. For example, Canada's mining industry knows its success depends on how well it makes use of advanced technologies in exploration, extraction and production. The sector recognizes that its licence to operate in Canada and abroad increasingly depends on the soundness of its environmental performance and social responsibility.

Similarly, [Canada's forest sector](#) knows it must continue to adjust to an increasingly competitive global market, building upon its commitments to strong environmental performance and sustainable forest management. It will continue to shift from its historical volume-based commodity focus towards a more market-driven portfolio of higher value forest-based bio-products, with a near-term emphasis on increasing reliance on forest bio-energy.

The country's [energy sectors](#) are no different. They contribute billions of dollars in investment in production, including renewable and alternative energy, and are working to address complex challenges they face in producing cleaner products, reducing greenhouse gas emissions and updating energy infrastructure.

Building on a Solid Foundation

In 2006, NRCan initiated a comprehensive renewal exercise, the [North Star Initiative](#). Employees throughout the department were engaged in establishing a common purpose for NRCan, transforming the way we work and enabling change. [North Star](#) led the way to redefining NRCan by putting in place the building blocks of a stronger, more collaborative and integrated results-based organization.

INTERNAL ENVIRONMENT

Departmental Renewal and Responsiveness

In step with the changing global context, NRCan is reshaping how it fulfil its core federal roles to contribute more effectively to new competitiveness imperatives and to better deliver on the government's agenda. Going forward, what matters is working to strengthen the conditions for sustainable, resource-led growth. This is about enabling firms to invest and compete locally and globally. For NRCan, this entails pioneering geographic and knowledge frontiers when national interests deem it necessary. It means working to drive the national S&T and innovation agenda on natural resources, turning the idea of being cleaner into reality faster. And it demands that NRCan build partnerships that are priority-driven, better leveraging capacity and focusing on results. In delivering on this agenda, NRCan will depend on its policy, science, regulatory and programming expertise.



The changes in NRCan's strategic roles are part of the department's broader commitment to renewal, spurred by the need to develop a more collaborative, integrated and results-based organization and advance [Public Service Renewal](#). We have been advancing [horizontal collaboration](#) and [science-policy integration](#), and have developed a [Strategic Framework](#) to help guide and underpin our way of doing business, highlighting our vision and the importance of finding synergies within and between three key asset groups: natural resources, systems, and people and ideas. We have been working toward these ends by changing the way we organize ourselves and promoting a culture of information sharing, for example by creating and promoting the use of the [NRCan Resource](#)

[Wiki](#). And we have been cultivating [collective leadership](#) throughout the department to advance our collaboration and deliver better outcomes.

Continually building on our successes, we have taken steps to improve our management structures, increase efficiencies and strengthen accountabilities. A strong focus has been placed on [human resources renewal](#), from recruitment and development of our staff to the management of our talent, with a view to develop our leadership and expertise. Finally, our [Science and Technology Strategy](#) has enabled us to enhance the relevance, quality and impact of our substantial investment in S&T.

Ensuring Success Through Collective Leadership

Leaders throughout NRCan employ [collective leadership](#) in the way they work, collaborate and lead. Defined as "leading together to achieve things that we cannot do alone," collective leadership includes four key elements on which we are focusing:

- common purpose;
- cultivating leadership;
- collaboration; and
- continuous learning.



NRCan's Delivery Capacity

To succeed, NRCan must have the capacity to deliver on its vision and priorities. It must have the people, physical and information assets, and financial resources and systems that are central to running its business effectively and efficiently. NRCan has the diverse and highly skilled work force necessary, but its workforce mirrors the country's aging demographics, with

30 percent of employees and 41 percent of the executive group eligible to retire by 2015. Like other employers, NRCan also faces competition in recruiting and retaining talented and specialized employees.

NRCan also manages a wide range of physical assets that are necessary to deliver on priorities, from complex labs to information systems. Many of these buildings and labs, as well as the equipment they contain, are

Budget 2010 and Results of the Strategic Review

[Budget 2010](#) announced the government's commitment to creating and maintaining jobs, building the economy of tomorrow, and returning to balanced budgets.

A ROLE FOR NRCAN

NRCan was provided \$100 million over four years to establish the Next-Generation [Renewable Power Initiative](#); \$35 million over two years to support research and development of new technologies for the production of isotopes; \$11 million over two years for the [GeoConnections Program](#); and \$12 million over two years for the [Targeted Geoscience Initiative](#).

STRATEGIC REVIEW

The results of the 2009 Strategic Review were also announced in Budget 2010. Strategic Review is an integral part of the Expenditure Management System, which supports the government in expenditure planning and decision making, budget implementation, and oversight. All federal departments and agencies participate on a four-year cycle, helping ensure that their programs and services are efficient and effective, aligned with the priorities of Canadians, and sustainable over the long term.

NRCan completed its first Strategic Review in 2009 and used the opportunity to take stock of and carefully consider its roles, confirm its alignment with government priorities, and position itself for the future. Budget 2010 announced that NRCan would implement measures that will allow \$43 million in savings to be reallocated to other federal priorities over the next three years.

Moving to implementation, NRCan will build on its excellent track record in managing transition when changes occur in programs and in the workplace. We will continue to care for our people as we implement the strategic review reallocations.

aging. And while equipment is purchased to support new areas of research, the replacement of existing equipment, which continues to be required for ongoing program requirements, is often deferred. The replacement costs of NRCan's assets are expected to rise as we head into the future.

NRCan is successfully delivering a number of major, high-priority, sunset (time-limited) programs. In fact, this type of programming currently accounts for more than 60 percent of NRCan's funding. This funding structure brings certain risks and can increase the uncertainty of managing long-term capital assets and highly qualified personnel. The rapid design and/or scale-up of large dollar-value programming associated with delivering significant, high-priority programming creates the additional challenges of having to quickly enhance our capacity to develop, implement and monitor grant and contribution agreements. As our funding streams expand and contract in response to government priorities, so too does our work, in order to ensure that our workforce and corporate infrastructure are being managed accordingly and responsibly.

A Focus on Priorities

NRCan plays an important role in delivering on the priorities of Canadians. It manages significant contribution programs that address the critical issues of the day, such as the [ecoENERGY for Renewable Power](#)

and [ecoEnergy for Biofuels](#) programs, the [Clean Energy Fund](#), and the [Pulp and Paper Green Transformation Fund](#). Going forward, NRCan has set for itself priorities that will continue to support the government's agenda, respond to the needs to Canadians, and work to address demands of the global economy and the new competitiveness model. The department is therefore committed to:

- **improving the performance of the regulatory system for major project reviews**, which will help ensure that Canada is the best country in which to invest;
- **enabling competitive resource sectors**, with a focus on innovation in the forest sector and green mining to enhance market opportunities and create the jobs and economy of tomorrow;
- **advancing the clean energy agenda**, to help grow Canada's status as a clean energy superpower, through science, technology advancements and program investments;
- **managing nuclear issues** to meet Canada's energy and environmental needs, while reducing costs and risks to taxpayers, and positioning Canada's nuclear industry to prosper; and
- **advancing sustainable resource development in the North**, to help Canada realize the vast potential of the region's people and resources.

MANAGING OUR BUSINESS: STRUCTURE AND STRATEGY

NRCan's Integrated Business Plan articulates what we are delivering in support of achieving our vision of a sustainable resource advantage for Canada. Our work for the next three years is based on three strategic outcomes:

1. **Economic competitiveness**

– Natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians;

2. **Environmental responsibility**

– Canada is a world leader on environmental responsibility in the development and use of natural resources; and

3. **Safety, security and stewardship** –

Natural resource knowledge, landmass knowledge and management systems strengthen the safety and security of Canadians and the stewardship of Canada's natural resources and lands.

Supporting these strategic outcomes are seven program activities (PA) and several sub-activities – together these comprise our [Program Activity Architecture](#) or PAA. A visual representation of this PAA structure can be found in Annex A.

The NRCan business strategy is to focus on two parallel areas:

1. delivering on the [Government of Canada's agenda](#) and on our statutory obligations via five **business priorities**; and

2. how we deliver results – pursuing **strategic roles** where our expertise and position give us a unique advantage and aligning our resources to successfully advance our vision and business priorities.

NRCan's corporate governance structure is core to delivering on its strategic outcomes and succeeding in its business strategy. The governance structure comprises executive and advisory committees that enable and support collective leadership and integrated management of policy, programs and finances. Together these committees cover the breadth of corporate issues – policy, financial management, results management and other corporate activities.

The executive level comprises the most senior committees in the department. The **Departmental Management Committee**, chaired by the Deputy Minister, meets weekly and provides overall steering on priorities and direction of the department, including decisions on significant policy, program and management issues.

Also chaired by the Deputy Minister, the **Policy and Science Management Committee** ensures intra-departmental coordination of major policy issues and initiatives. It serves as the decision-making body for proposals to the Minister, Memoranda to Cabinet and other Cabinet submissions as well as international

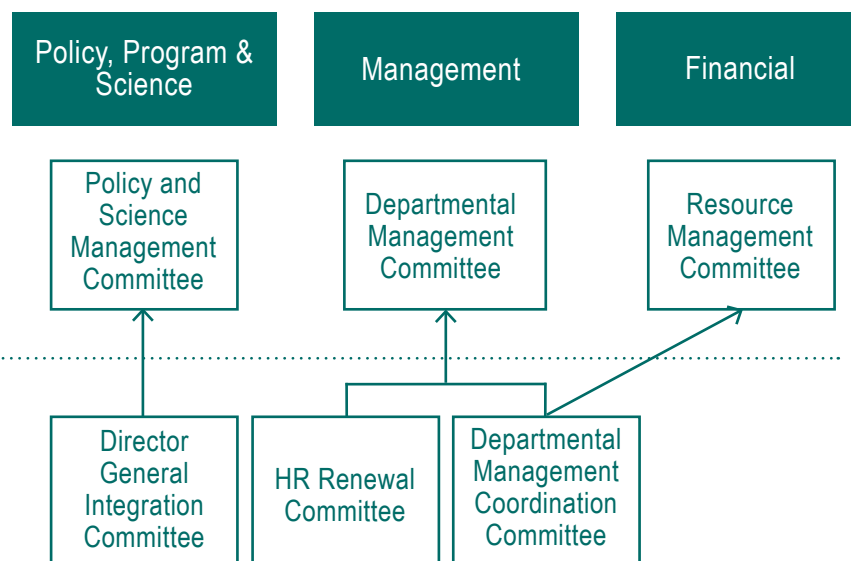
Corporate Governance Structure

EXECUTIVE:

- Permanent
- Chaired by Deputy or Associate Deputy
- Has ADM membership
- Decision-making power

ADVISORY:

- Permanent,
- Advise/support the Deputy, the Associate Deputy or a Committee



agreements. It provides a departmental forum for sharing perspectives on horizontal and sector-specific policy issues/initiatives.

The **Resource Management Committee** was created in the fall of 2009 to ensure that resource and investment decisions are fully integrated with and support departmental direction and strategies. The committee, chaired by the Associate Deputy Minister, meets monthly and promotes the efficient and effective use of financial resources from an overall departmental perspective, ensuring that resource allocation is aligned to NRCan's business.

The Director General Integration Committee, the **HR Renewal Committee**, and the **Departmental Management Coordination Committee** directly support executive-level committees through the provision of expert advice and the vetting of issues and meeting materials en route to the executive committee tables.

NRCan governance also includes the **NRCan Evaluation Committee**, chaired by the Associate Deputy Minister and composed of members of the Policy and Science Management Committee. The committee leads the development and review of evaluation plans and terms of reference; reviews final evaluation reports, including management responses and action plans; and makes recommendations to the Deputy Minister on all evaluation activities of the Department.

Lastly, the **Departmental Audit Committee**, established in 2009 as required by the Policy on Internal Audit, is another element of NRCan's governance. Composed of the Deputy Minister, the Associate Deputy Minister and three external members, the DAC provides the Deputy Minister with independent, objective advice and guidance on the adequacy of the department's risk management, control and accountability processes. For 2010-11, the DAC will

focus on three priorities chosen to support the department in realizing its outcomes and business strategy: Risk Management, Financial Statements and Public Accounts, and Risk and Accountability Reporting.

WHERE WE WILL FOCUS: OUR BUSINESS PRIORITIES

We have set business priorities for the next three years that support the government's agenda and respond to the economic and environmental imperatives driving the natural resource sectors. We are responsible for delivering key EAP initiatives: they are identified below.

Priority: Improving the Performance of the Regulatory System for Project Reviews

WHY IS THIS A PRIORITY? Addressing the challenges facing the federal regulatory system for project reviews is key to creating the conditions for an innovative and prosperous economy, protecting the health and safety of Canadians, and conserving the environment.

WHAT ARE THE PLANS FOR MEETING THIS PRIORITY? Through the [Major Projects Management Office](#) (MPMO), NRCan will continue to provide overarching management of the federal regulatory review process for resource projects. Furthermore, we will work collaboratively with other federal regulatory departments and agencies to develop and implement innovative new approaches that will continue to improve the performance of the federal system. This work will include the development and implementation of a whole-of-government strategy to modernize the regulatory review process for project reviews, including improvements to the federal legislative and/or regulatory framework. It will also include working collaboratively with provincial governments to identify opportunities to improve the integration of federal and provincial review processes.

Supports
all three
strategic
outcomes

Priority: Competitive Resource Sectors

Supports
all three
strategic
outcomes

WHY IS THIS A PRIORITY? Canada's natural resource sectors are facing long-term, structural challenges. Supporting enduring, sustainable and transformative change is key to improving the long-term economic competitiveness and sustainability of these sectors.

WHAT ARE THE PLANS FOR MEETING THIS PRIORITY? NRCan will deliver on this priority with substantial new funding for [FPInnovations](#) (EAP initiative) – Canada's integrated forest products research institute – to develop the knowledge and technologies to transform the forest sector using new products and new end-uses for wood fibre (EAP initiative). NRCan will also make new substantial contributions to grow a broader portfolio of forest product markets, both at home and abroad, and will ensure that the environmental reputation of the sector reflects the reality of its strong record of sustainability.

Key to delivering on this priority is NRCan's decision to renew and [relocate its CANMET Materials Technology Laboratory](#) to the world-class McMaster Innovation Park in Hamilton, Ontario.

Priority: Clean Energy

WHY IS THIS A PRIORITY? Energy is one of the largest segments of the economy and Canada's leading resource export. This wealth of resources already makes Canada an energy superpower. In keeping with the competitiveness model, NRCan is working to make Canada a clean energy superpower. Strong federal leadership is critical to ensuring that all of Canada's energy resources can continue to contribute to the country's economy, while meeting domestic and global expectations that energy be produced and used in cleaner and sustainable ways.

WHAT ARE THE PLANS FOR MEETING THIS PRIORITY? NRCan supports a clean energy transition through the delivery of programs, including its suite of [ecoENERGY programs](#) comprising part of the government's broader [ecoACTION plan](#). In general, the department takes action in three key themes: energy efficiency; renewables and clean electricity; and cleaner fossil fuels and alternatives.

NRCan's clean energy programs support the government's objectives by encouraging the uptake of energy efficiency products and services (e.g. the [ecoENERGY Retrofit – Home Program](#) [EAP initiative]); developing markets for new clean technologies (e.g. the [ecoENERGY for Renewable Power](#) program); and supporting industry-specific innovations (e.g. the [Pulp and Paper Green Transformation Program](#)).

NRCan will continue to support Canada's science and innovation system and pursue international collaboration to drive clean energy research and development. In particular, the [ecoENERGY Technology Initiative](#) and the [Clean Energy Fund](#) (EAP initiative) support the research, development and demonstration of cutting-edge, clean energy technologies.

Supports
strategic
outcomes
#1 and #2

Priority: Managing Nuclear Issues

Supports
strategic
outcomes
#1 and #2

WHY IS THIS A PRIORITY? Nuclear energy plays a critical role in Canada's energy mix. The government's nuclear policy is driven by three over-arching objectives: (i) meeting Canada's energy and environmental needs safely, economically and reliably; (ii) reducing costs and risks for taxpayers while maximizing returns on Canada's investments in the nuclear industry; and (iii) positioning Canada's nuclear industry to seize domestic and global opportunities.

WHAT ARE THE PLANS FOR MEETING THIS PRIORITY? NRCan will deliver on this priority in partnership with key entities within the Minister's portfolio and other government departments. In particular, NRCan will support Atomic Energy of Canada Limited (AECL) in its efforts to: renew its infrastructure to meet health, safety, security and environmental requirements; and develop advanced CANDU reactor designs. NRCan will continue to implement the announced restructuring of AECL and the offering of its commercial reactor division, with the objective of positioning Canada's nuclear industry to take maximum advantage of domestic and international opportunities. Throughout the restructuring process, AECL funding pressures will need to be managed in order to preserve the value of the asset. NRCan will also support the Canadian Nuclear Safety Commission in its efforts to improve the effectiveness and efficiency of the regulatory approvals process. Together with Health Canada, NRCan will work to ensure that Canadians have a secure supply of medical isotopes. Finally, NRCan will continue to manage the government's radioactive waste liabilities.

Priority: Sustainable Resource Development in the North

WHY IS THIS A PRIORITY? Key objectives of the government are to realize the vast potential of Canada's North, strengthen Canada's sovereignty and promote northern economic and social development, which requires private sector investment. NRCan is supporting the industry in making informed and effective investment decisions by providing improved landmass, offshore and resource knowledge, and certainty of tenure.

WHAT ARE THE PLANS FOR MEETING THIS PRIORITY? The five-year/\$100-million [Geo-mapping for Energy and Minerals program \(GEM\)](#), implemented in collaboration with territorial governments and local communities, will lead to increased private sector investment in new energy and mineral resources in the North. NRCan is undertaking legal boundary surveys of Aboriginal land claims to support economic development; providing logistical support for Arctic research; and completing the topographic mapping of the North by 2012, which will provide the geographic information to help manage economic development.

Supports
strategic
outcomes
#1 and #3

Measuring success

We will be monitoring the achievement of these priorities and the progress of their supporting initiatives on a quarterly basis

through the performance measures of our [program activity architecture](#), including at the strategic outcome and program activity levels (see pages 27 and onward for details on indicators and targets).

OUR ROLES AND IMPLEMENTATION STRATEGIES

NRCan has redefined its roles in order to deliver on its priorities, identifying areas where it can make the biggest difference and recognizing where others can best play a role. To this end, we will deliver on priorities by building partnerships that are priority-driven, by pioneering geographic and knowledge frontiers, and by driving the national S&T innovation agenda for natural resources. These roles are mutually reinforcing.

The department believes that strengthening the efficient and effective management of its people, physical and information assets, and finances is key to succeeding in these roles.

Building on Our Expertise: Pioneering New Geographic and Knowledge Frontiers

More and more, NRCan's role is to pioneer new frontiers. This role builds on our history as a mapping and geological path-breaker in new knowledge. It is about focusing our efforts to advance sustainable resource development in the North, [clean energy](#) and the competitiveness of the resource sectors.

We are a significant provider of knowledge. We produce insight into Canada's geology for energy and minerals; monitor Canada's forests for the impacts of pest infestations, wild fires and [climate change](#); and develop digital maps of Canada's landmass. Such information is integral to investment decisions related to

exploration, new resource projects and the livelihood and security of Canadians across all regions. This expertise is also used to minimize environmental risks and to monitor, measure and help mitigate natural disasters (e.g. [earthquakes](#), [tsunamis](#)). Moving forward, we are advancing our geoscience knowledge of the North, contributing to Canada's continental shelf submission under the United Nations Convention on the Law of the Sea, and stimulating exploration and investment north of 60. We are also working to deepen our understanding of groundwater supply by mapping 30 of Canada's most important aquifers.

Building on Our Position: Leading the S&T Innovation Agenda

NRCan has a national leadership role to play in spearheading S&T in natural resources.

DID YOU KNOW?

NRCan has 18 major laboratories across the country and more than 3,000 employees who undertake S&T activities on topics as varied as [carbon capture and storage](#) and the [mountain pine beetle](#). Our S&T provides evidence in support of policies, regulations and standards, and enables greener and more competitive natural resource sectors.

Strengthening our capacity in science and technology

To fulfill its core roles, NRCan needs strong capacity in science; various strategies have been put in place to access and leverage this expertise:

- Through the [Research Affiliate Program](#), NRCan provides bursaries to students via a tripartite agreement between the department, the student and the university to support research in areas of interest to the department;
- NRCan annually hosts approximately 1200 students and post-doctoral researchers;
- The department is working with the [Natural Sciences and Engineering Research Council](#) and other partners to drive and coordinate university research in areas such as forestry, clean energy, geo-mapping and materials technology;
- Preparations are underway to [relocate the CANMET Materials Technology Laboratory](#) to a state-of-the-art facility at McMaster University's Innovation Park in 2010, and NRCan has seven other co-location agreements in place at universities in British Columbia, Ontario, Quebec and Newfoundland; and,
- NRCan scientists hold over 400 adjunct professorships, including some individuals with adjunct status at more than one institution, involving them in joint research, teaching and mentoring.

The objective is to leverage innovation, S&T and enhanced productivity to contribute to long-term competitiveness and environmental responsibility. Guided by our [S&T Strategy](#), we are mobilizing our S&T endowments and ensuring the relevance, impact and world-class quality of our S&T activities.

We are making more effective use of the whole of Canada's innovation system. We are building strong collaborations to better leverage S&T investments by public and private sector players, nationally and internationally. We are looking for and building synergies across the natural resource

sectors and across S&T disciplines in order to find the best solutions. More specifically, we are leading clean energy research, development and deployment in the areas of cleaner fossil fuels and renewable alternative energy sources. The [Clean Energy Fund](#), which we administer, supports projects in the areas of next-generation renewables, clean power systems and [smart grids](#), as well as large-scale demonstration projects for [carbon capture and storage](#). We are working to advance innovation in forestry research, most notably through [FPInnovations](#), a partnership of government and industry that works to develop, adapt and demonstrate new products and end-uses for wood fibre.

Building on Our Networks: Focusing on Priority-Driven Partnerships

Forging ahead, we will make more deliberate choices on multi-stakeholder partnerships and organizational arrangements with industry, provinces, territories, academia and international players to advance Canada's competitive position. This priority-driven partnership approach is guided by a strategy of leveraging in others what they are best positioned to do, allowing others to lead in areas where they are better equipped to deliver, and targeting NRCan's participation on what will yield the most meaningful results for Canadians.

Our strategic approach to partnerships is reflected in the [Green Mining Initiative](#). This multi-stakeholder initiative is focused

on spurring innovation and technological solutions aimed at improving the environmental performance and image of mining, generating growth opportunities from green technologies and services, and earning a social licence to operate. We are also leading and reinforcing partnerships to benefit Canada and Canadians through the [Major Projects Management Office \(MPMO\)](#), which works in collaboration with other federal regulatory departments and agencies to improve the performance of the federal regulatory system for project review. Looking forward, this will also include working with provincial governments to identify opportunities to improve harmonization of federal and provincial review processes, all with a view to accelerating and ensuring the sustainability of investments in our natural resource sectors.



Recruiting Talent:

The **On-Campus Recruitment Program** recruits students and soon-to-be university graduates and allows for precise targeting of faculties and campuses to meet business needs.

Results to date (for 2009-10):

- 125 post-secondary graduates were recruited on an indeterminate basis, of which 25 were from visible minority communities; and
- 703 students have been hired, an increase of 100 over the same period the previous year.

The **Policy Analysts Recruitment and Development Program** provides a point of entry into NRCan's policy and economics community. It offers assignments, career progression opportunities and mentoring to new recruits.

As the largest national funder and performer of forest-related S&T in Canada, NRCan is providing national leadership in forest innovation through the development of strong partnerships that focus on knowledge and research areas critical to the sustainability and competitiveness of the forest sector.

Aligning Our Resources to Deliver Results

We have an ambitious agenda that calls on all of our collective strengths. Mobilizing and aligning our enabling resources – first and foremost our people, as well as our

physical and information assets, and financial resources – are critical if we want to continue to achieve success. It is also critical to demonstrate and communicate to Canadians that we manage taxpayer funds effectively and efficiently, and that we deliver real results.

Our People

Excellence in human resources management is critical to achieving our priorities and running our day-to-day business efficiently. Departmental efforts are aligned to a robust Talent Management Framework, which makes it a priority to recruit, develop and retain talent, while managing performance effectively.

Talent Management

NRCan's Talent Management Framework supports our business objectives as well as the objectives of **Public Service Renewal**. It follows a comprehensive talent continuum from recruitment and **on-boarding**, through to succession planning and transition out of the organization.



Judicious workforce management enables us to identify gaps and fine-tune the right mix of talent needed to deliver on our departmental priorities. The intelligence gathered is used to precisely target departmental recruitment strategies – such as the annual [On-Campus Recruitment Campaign](#) – to meet our current and emerging business needs. Through career fairs, information sessions, the Web and social media, NRCan is generating interest in indeterminate, term and student job opportunities across Canada, and promoting key capacity-building initiatives such as the [Policy Analyst Recruitment and Development Program](#) and the [Research Affiliate Program](#).

The department's employee development and retention strategies create a supportive and enabling work environment where all employees are encouraged to contribute and learn, labour-management relations are nurtured, diversity is valued and respected, work-life balance is encouraged, and harassment and discrimination are not tolerated.

The [Key NRCan Competencies](#) are an example of a recent employee-led development initiative. A multi-disciplinary team made up of employees and managers at various levels from across the department developed a set of four NRCan-specific competencies – *organizational awareness, collaboration, flexibility and innovation* – that support the guiding principles of [NRCan Renewal](#) and complement the existing [Key Leadership Competencies](#) for the Public

Service. As the Key NRCan Competencies become part of our culture, they will be used throughout our Talent Management System to empower employees to take charge of their development and enable managers to attract, develop and retain the right mix of resources to deliver on our departmental priorities. By collectively adopting the Key NRCan Competencies, we can help foster a culture of renewal and build a workplace of choice that enables us to continue providing the best possible service to Canadians.

Managing performance

NRCan's performance management initiatives strive to foster meaningful dialogue between employees and managers on performance, career planning, and learning and development opportunities.

We continue to strengthen the performance management regime for executives, both in terms of clarifying expectations, and the review process. For example, executive performance agreements include commitments on program and policy results (derived from business plans), management results (in priority areas), and leadership results (based on the [key leadership competencies](#)). The Executive Talent Management Committee meets twice a year to discuss the performance and development of executives. In an effort to bring performance management deeper into the organization, all managers are required to complete their direct reports' written performance evaluations and learning plans. To support them in this, tools and resources

Steps to increase workforce diversity:

At the entry level, 18% of indeterminate employment offers to post-secondary graduates were made to members of visible minority communities.

The **Visibility Talent Management Program** was launched in November 2008 as the Deputy Minister's signature commitment under Public Service Renewal to increase visible minority representation, particularly in the executive levels.

The Talent Mapping Pilot currently has 35 participants. The Pilot supports participants in their learning and development needs and enables the department to manage its talent. Furthermore, the lessons learned from this Pilot will be incorporated into the next phase of talent mapping of different groups of employees at the EX minus one level.

are provided to ensure that performance expectations are clearly communicated and issues are addressed proactively.

Developing Leaders

NRCan has achieved success in developing current and future leaders through integrated talent management approaches. The **Executive Talent Management Program (EXTMP)** integrates classification, staffing, succession planning, learning and career development, performance management and recognition components. A key feature of this approach is the annual talent mapping

exercise where each executive is talent mapped to identify gaps in competencies, and develop specific action and learning plans.

Building on the success of the EXTMP and our in-house leadership development program, *Leaders on the Move*, NRCan launched the **Visible Minority Talent Management Program (VMTMP)** as a proactive approach for cultivating leaders in the visible minority community. The VMTMP features talent mapping, career enhancement and mentoring components, and has successfully prepared participants to compete for promotions. The career enhancement component is being rolled out department-wide in 2010-11 as a powerful career management tool for employees.

Recognizing the value of talent mapping, we are progressively expanding the approach to executive feeder groups and levels below, with a view to supporting succession planning, as well as long-term employee development and retention.

Leadership in Action

NRCan employs a one-department approach to generate innovative solutions to complex human resources issues. For example, by managing the risks associated with sunset funding at a departmental level, NRCan is using indeterminate staffing to retain many talented young professionals previously employed as term employees. In addition, management and bargaining agents are taking a collaborative approach to workforce adjustment situations, ensuring that affected employees receive full consideration for employment opportunities

within the department or elsewhere in the Public Service, with a primary objective of employment continuity.

As we advance the [NRCan Renewal](#) agenda, we will continue to adjust and align our people management initiatives, at both the sectoral and departmental levels, to meet our critical business needs. Maximizing our collective potential, we will continue to promote a fair and transparent approach to managing talent at NRCan.

Our Information and Physical Assets

NRCan delivers a vast array of programs that are enabled and enhanced by information technology (IT). Maintaining our current IT infrastructure and keeping abreast of

the latest development are key to ensuring the efficient and effective delivery of our programs. For example, we rely on sophisticated scientific applications for mapping and radar initiatives, seismic studies and metals analysis.

The creation and dissemination of knowledge is also central to our mandate. Knowledge is made available to the public, industries and stakeholders and is used to support the government's role in maintaining boundaries and ensuring public safety. In support of this creation and dissemination of knowledge, NRCan relies on a suite of IT applications, physical assets (laboratories, libraries, publications, etc.) and on the tacit knowledge of its employees.

Collaborative technologies are producing results for NRCan:

[Web 2.0](#) tools are being used to collaboratively create and share information and knowledge across the department. For example, the [Wiki](#) enabled the quick and collaborative development of the [NRCan Dashboard](#), which is used to track commodity prices, key financial indicators and oil and gas production levels, as well as other relevant statistics. This information was particularly relevant in informing our work on key natural resource sectors during the economic downturn.

Our growing [blogging](#) community allows for open discussions and debates and for communication, information sharing and linkages between regional offices.

[Communities of practice](#) are being developed spontaneously to support or drive an initiative of common interest. Horizontal in nature, these communities support new ways of sharing knowledge, capitalize on employee expertise and allow for collective community leadership. Examples of active communities of practice in the department include the [International Shadow Task Team](#), the [Video Community of Practice](#) and the [Fresh Water Community of Practice](#).

We are also developing approaches to address the loss of corporate memory by actively capturing data, information and knowledge at risk. For example, one area of the department is running a pilot project that involves conducting exit interviews in order to capture and retain knowledge. The use of video is one of many elements of this pilot.



DID YOU KNOW?

NRCan was the first department in the federal public service to use [Twitter](#) to promote career opportunities! Our recruitment social media pilot project also uses [Linkedin](#) and [Facebook](#), and is planning to use [YouTube](#).

A focus on collaborative technologies

The department is embracing a culture of collaboration and information sharing through a suite of [Web 2.0](#) tools that facilitate communications, dialogue and knowledge transfer. These tools help increase collaboration for a workforce that is geographically dispersed. This allows us to tap into our expertise from coast to coast and enable us to lead the natural resources S&T agenda.

With a growing community of [bloggers](#), a [Wiki](#) housing 8,000 articles, the [NRTube](#) video-sharing site with over 230 videos watched over 2821,000 times, and a powerful search engine, the department has laid the foundation for the development of an [Integrated Natural Resources Knowledge Base](#), and is leading the way in how the federal government uses Web 2.0.

In addition, the [NRCan Library](#) is shifting its focus from “services to the desktop” to more mobile access with “a library in your pocket” in recognition of the burgeoning use of smart phones embraced by a younger, more technology-dependent workforce. The [Library](#) will respond with e-alerts, citation

management and bookmarking services to complement Google-like search and retrieval functions.

Physical infrastructures

NRCan’s S&T activities take place throughout Canada, from coast to coast to coast. To support our business, we manage a range of assets from scientific equipment and scientific applications to specialized real property holdings. In addition, to support scientific research and to effect an efficient administration, the department has in place extensive information management and information technology assets.

Like the majority of science-based departments, we face the challenge of operating and maintaining aging buildings, laboratories, and scientific and technical equipment. The government’s priorities and departmental business priorities have influenced the areas of government research, impacting both the specific areas of scientific research and equipment required. As mentioned earlier, when equipment is purchased to support new areas of research, the replacement of existing equipment that continues to be needed for ongoing program requirements is often deferred. The replacement cost of our assets is expected to rise over the next few years as facilities and equipment continue to age.

Progress has been made to address this problem. [Canada’s Economic Action Plan](#) has provided for significant investments in our laboratories across the country:

- The [Modernizing Federal Laboratories](#) initiative provided \$47.8M to modernize 12 laboratories;

- The Arctic Research Infrastructure Fund provided the Polar Continental Shelf Program – Resolute with \$11M to expand living and working facilities in the Arctic, accommodate the increased number of researchers working in the Arctic, and support the field and logistics requirements associated with a longer operational season; and
- The Accelerating Action on Contaminated Sites initiative has helped the department undertake the Booth Street Complex Contaminated Site Remediation, which is necessary to reduce the environmental liability associated with the site and to assist in future site redevelopment, at a cost of \$25.3M.

In addition, we are investing in our systems by upgrading to a new version of PeopleSoft to support HR modernization, and by implementing FELIX (SAP), an enterprise resource planning system to replace our existing financial, materiel management and project management systems. This new, integrated system will enhance the capacity of managers to understand the state of the department’s assets and better analyze financial and non-financial information to support decision making.

DID YOU KNOW?

NRCan has libraries across Canada that provide physical materials – books, maps, papers and journals – as well as electronic resources to NRCan employees to support research activities. The libraries are open to Canadians and house Canada’s most extensive collections on natural resources, some dating back to the 18th century.

Looking forward, we will work to ensure the targeted deployment of scarce capital resources to areas of the greatest need and greatest programming impact. To that effect, our Investment Plan provides a five-year integrated outlook on investments and acquired services to support departmental outcomes and program objectives.

Our financial resources and systems

Our operating budget for fiscal year 2010-11 is \$4,455.9 million. This includes \$1,676.4 million in planned spending for the Atlantic Offshore Accords’ statutory payments. The Accords provide that the benefits of revenues from the offshore should flow to provinces as if the resources were on land, and direct that these revenues be collected by the Receiver

PLANNED SPENDING (\$M)	2010-11	2011-12	2012-13
Program Spending	2,779.5	1,681.3	1,234.9
Statutory Programs - Atlantic Offshore	1,676.4	1,354.7	1,010.9
TOTAL	4,455.9	3,036.0	2,245.8
FULL-TIME EQUIVALENTS (FTES)	4,571	4,347	4,300

[General for Canada](#), with a like amount to be paid to the provinces (Newfoundland and Labrador and Nova Scotia).

Departmental planned spending is expected to decrease in 2011-12 and 2012-13 as the EAP initiatives and priority-focused, time-limited sunset programs wind down.

For further details on planned spending by Strategic Outcome and Program Activity, see Annex B.

As mentioned in previous sections, 60% of NRCan's funding profile is composed of sunset funding, and this carries with it risks such as increased uncertainty for managing long-lived capital assets and highly qualified personnel. To help NRCan manage these and other risks, the department has recently created the Resource Management Committee, which will contribute to strengthening financial management at the departmental level. The implementation of our Investment Plan will also allow for a focus on the long-term management of our assets and prioritization of our investments where

they support departmental priorities.

Aligning our resources for success

As outlined above, steps will be taken to further align each of our key resources – our people, physical and information assets, and finances – to the priorities of Canadians. We will also further integrate consideration of our suite of resources into decision making, recognizing that success comes from leveraging all of our strengths.

To increase our likelihood of success, we will develop and further refine key processes to manage our business. This includes continuing to implement a planning process based on priorities and accelerating the identification of how our programs can support priorities and where gaps in capacity may emerge. We will also improve the quality and the scope of data used in support of business and program planning when conducting our annual environmental scan (e.g. strengthening our analysis of the internal context and its interplay with the external environment). Having a more comprehensive

How this plan came to be...

In the summer and fall of 2009, the [Departmental Management Committee](#) set the business priorities, while an integrated business planning fair launched the department's business planning process. A network of business planners representing all sectors in the department – the Corporate Planning Network – took the lead in engaging employees and management teams, articulating our plans and our collective alignment to priorities. A senior management committee (the [Departmental Management Coordination Committee](#)) led development of the Integrated Business Plan (IBP) and the "NRCan story" and provided feedback throughout the development of the plan. Engagement with internal service experts provided the "integration" of business and enablers along with discussions with individual sectors. Finally, our Departmental Management Committee guided the final completion of the IBP and led the way for broader staff engagement on the direction, plan and feedback mechanisms.

understanding of in-house competencies and talent at department levels will, when combined with data on the labour markets, allow us to assess the merits of various human resource and business strategies and related implementation approaches.

With a view to improving coordination with our portfolio partners, we are strengthening communication and implementing new processes and structures to further strengthen the relationships and outcomes. We are committed to achieve this through the work of a dedicated function that provides strategic advice and management services on portfolio issues, parliamentary business, and communications.

As many of our sunset programs wind down, strengthening our policy capacity will be particularly critical in order to draw on the full benefits of our position – our mandate, expertise and alignment to the government agenda – in crafting sound and evidence-based policies and program proposals.

We will reinforce our financial management to enable us to make evidence-based financial and non-financial decisions. This will be facilitated by the renovation of both our [Program Activity Architecture](#) and its supporting [Performance Measurement Framework](#), as well as the execution of an implementation strategy for strategic review. This will allow for better, more informed decision making and enhance senior management's ability to measure performance and make strategic resource allocations/reallocations.

In 2008, the Public Affairs and Portfolio Management sector was put in place to better integrate and manage the coordination of the natural resources portfolio, and a DM-chaired inter-portfolio Heads of Agency group was created to discuss key issues and areas of concern. These actions enhanced portfolio coordination within the department by fostering coherent policy implementation, good governance, effective communication, information sharing and accountability.

Moving forward, we will collectively make the business strategy outlined in this document a reality. Staff will be engaged to discuss and react to the plan, and several venues (including the Feedback Form in Annex D) will be made available for the purpose of proposing improvements for the next year.

OUR BUSINESS BY STRATEGIC OUTCOMES

NRCan manages its program delivery through three strategic outcomes (SOs) and seven program activities (PAs) that are designed to achieve medium- and long-term outcomes in support of our vision. A description of programs and activities is provided below for each of the PAs.

Programs and initiatives that directly contribute to achieving our priorities have been marked with a * sign; programs and initiatives that are part of the EAP have been marked with a ♦ symbol.

STRATEGIC OUTCOME 1: ECONOMIC COMPETITIVENESS

Natural resource sectors are internationally competitive and economically productive, and contribute to the social well-being of Canadians.

The success and performance of this strategic outcome will be measured by the following indicator: *Canada's share of resource-based world trade relative to OECD nations.*

Its achievement will be supported by two Program Activities:

- 1.1 Economic opportunities for natural resources
- 1.2 Natural resource-based communities



STRATEGIC OUTCOME 1: ECONOMIC COMPETITIVENESS

	SHORT-TERM OUTCOMES	MEDIUM-TERM OUTCOMES	LONG-TERM OUTCOMES
1.1 ECONOMIC OPPORTUNITY FOR NATURAL RESOURCES	<p>The economic value of Canada's mining, metal and materials sector increases.</p> <p>Canada's forest sector and other relevant decision-makers are equipped to identify and address market opportunities and threats.</p> <p>Potential beneficiaries of fibre use have knowledge, services and technologies to extract maximum value from the resource.</p> <p>Effective institutional arrangements are in place that support innovation for the transformation of the forest sector.</p> <p>New geoscience data and knowledge of Canada, particularly in the North, lead to further private sector exploration and discovery of new energy and mineral resources, with consequent benefits to the Northern and Canadian economies.</p> <p>GoC has the information required to determine the best options for sustainable development of the energy sector.</p> <p>Management of statutory requirements related to offshore petroleum in Nova Scotia and Newfoundland in a timely and efficient manner.</p>	<p>Competitive national and international markets, stable economic opportunity and investment in natural resources.</p>	<p>Natural resources sectors are internationally competitive and economically productive, and contribute to the social well-being of Canadians.</p>
1.2 NATURAL RESOURCE-BASED COMMUNITIES	<p>Increased community awareness regarding the opportunities within the mining and minerals sector.</p> <p>Forest-based communities, including Aboriginal communities, have access to knowledge, tools, and funding partnerships to help them respond to sector transition issues and emerging opportunities arising from the forest base.</p>	<p>Increased knowledge, skills and capacity to benefit from the evolving natural resource economy within resourced-based communities (both Aboriginals and non-Aboriginals).</p>	

VISION: IMPROVING THE QUALITY OF LIFE OF CANADIANS BY CREATING A SUSTAINABLE RESOURCE ADVANTAGE

PROGRAM ACTIVITY 1.1: ECONOMIC OPPORTUNITY FOR NATURAL RESOURCES

Competitive national and international markets, stable economic opportunity and investment in natural resources.

WHAT THE PROGRAM ACTIVITY IS ABOUT

This PA is designed to promote innovation, investment and the enhancement of the competitiveness of Canada's natural resources and related products' industries through the provision of know-how and tools, including geoscience information, trade development and the removal of barriers to Canadian investment at home and abroad.

It also delivers policies, regulations and legislative initiatives to manage federal responsibilities associated with Canada's oil and natural gas supply, protect the critical energy infrastructure, and manage statutory programs for the Atlantic offshore.

MOVING FORWARD

In order to drive economic opportunities while enabling a greener minerals' and metals' sector, programming has been put in place to support a competitive Canadian investment climate, create technologies that add value and minimize potential downsides to minerals and metals production and use, and ensure the necessary continued access to global markets and resources. In particular, the newly relocated [CANMET Materials Technology Laboratory*](#) at the McMaster Innovation Park in Hamilton, Ontario,

will enhance our work with industry and academia on productivity issues through research and commercialization of new or improved materials and processes.

The [Green Mining Initiative](#), another multi-stakeholder initiative, will further reduce the environmental impacts of mining through the promotion and development of environmentally friendly technologies and processes and create opportunities for technology transfer abroad. Support for the sector will also be provided through the implementation of a corporate social responsibility strategy and by addressing other challenges, including declining base metal reserves.

Policies, programs and scientific research activities have also been put in place to foster a competitive forest sector. Our objectives are to promote innovation, generate more value from forest resources, support sustainable forest management practices, and expand offshore market opportunities for the Canadian wood industry. We conduct scientific research aimed at taking advantage of the unique attributes of Canadian wood fibre to maximize its value (e.g. through the [Value to Wood Program*♦](#)). We promote investment and innovation in forest research for the development of breakthrough technologies and more efficient tools and techniques in forest inventory, forest ecology and forest renewal (e.g. through the [Transformative Technologies Program*♦](#), in partnership with [FPInnovations](#)). We are also heavily engaged in growing and diversifying the markets for Canadian wood products and improving market access by enhancing the environmental reputation of Canada's



DID YOU KNOW?

NRCan, in collaboration with the Forest Products Association of Canada, FPInnovations, provinces and industry, is working to understand the role of bioenergy and biorefining as they relate to the forest. The objective is to generate more value from the forest while not compromising Canada's global leadership in forest sustainability.

forest industry, most notably through the [Canada Wood Export Program](#)^{*♦}, the [North American Wood First Program](#)^{*♦} and the Leadership for Environmental Advantage in Forestry program^{*}.

National leadership in the forest innovation system is also being provided to develop strong partnerships with FPInnovations and the Canadian Council of Forest Ministers. They will focus on knowledge and research in areas critical to the sustainability and competitiveness of the forest sector. Partnerships and institutional arrangements will also be created and reinforced to support an effective forest sector, in particular, the creation of the [Canadian Wood Fibre Centre](#) and [FPInnovations](#)^{*♦}.

With a view to expanding Canada's resource base, we are putting in place a foundation of modern geoscience that encourages private investment, which in turn could lead to the discovery of new deposits and expansion of reserves. For example, the [Geo-mapping for](#)

[Energy and Minerals](#)^{*} (GEM) program is a \$100M/five-year initiative that will generate new geoscience data and interpretation in Canada's North and adjacent offshore areas – where 60 percent of the area is not adequately mapped – thereby reducing the exploration risk and stimulating new mining and energy exploration and development. This will encourage investment in Canada's North for the benefit of northerners.

Support for Canada's energy sector – both domestically and internationally – is being provided through a number of policy, regulatory and legislative-based activities. The objective is to ensure the sustainable development of Canada's energy resources, while ensuring energy security and economic prosperity. We are also responsible for delivering on the government's core responsibilities. This includes the provision of expert advice on petroleum regulations and policy; the development of Canada's electrical resources; the deployment of carbon capture and storage in Canada's oil sands; and the maintenance of an adequate, reliable and environmentally sustainable supply of electricity at competitive prices.

Canada's energy interests will be represented at key international fora in 2010 – the [G8/G20](#) summits and the [World Energy Congress](#). Dialogue on energy at the international level will continue to be supported on an ongoing basis, most notably with the US through the Canada–U.S. Energy Consultative Mechanism and the [North American Energy Working Group](#).

Activities are also being undertaken to expand and diversify energy sources as Canada works toward becoming a clean energy superpower. For example, we are working to turn Canada's plentiful gas hydrates into a proven and useable source of gas; unlocking [geothermal energy](#) in Canada*; making [carbon capture and storage](#)* an everyday reality; and advancing the discovery and extraction of new offshore energy resources. The Geoscience for Future Energy Resources program will assess the potential of new and cleaner energy sources in Canada by highlighting the potential of those resources. Through this program, we will also advance Canada's progress in increasing its supply of electricity from non-emitting sources.

Finally, we are delivering on the government's responsibilities with respect to [nuclear energy](#), such as overseeing Canada's nuclear energy regulatory framework and supporting the renewal of [Atomic Energy of Canada Limited \(AECL\)](#)* – its research and development capacity, infrastructure, and the development of the advanced [CANDU](#) reactor. To that effect, we will continue to implement the announced restructuring of AECL and the offering of its commercial reactor division in order to position Canada's nuclear industry to take maximum advantage of domestic and international opportunities. We also support the [Canadian Nuclear Safety Commission](#) in its efforts to improve the effectiveness and efficiency of the regulatory approval process. We work to develop and advance policy relating to all aspects of uranium production and use, including the responsible management of nuclear waste.

DID YOU KNOW?

[NRCan's Polar Continental Shelf Program](#) provides ground and air support services annually to more than 150 scientific groups from universities and government agencies. They conduct scientific research across Canada's vast Arctic region in disciplines ranging from archaeology and climatology, to geosciences and glaciology, to space science and wildlife studies.

Together with Health Canada, we will work to ensure that Canadians have a secure supply of medical isotopes*.

HOW WE ARE WORKING TO ACHIEVE THIS

Our people

Our workforce in this PA is composed mostly of policy analysts, with specialized scientists in the forestry, mines, minerals and materials areas supporting our research and S&T activities. Anticipated gaps over the next three years have been identified for highly specialized forestry scientists and technicians and recruitment activities are being undertaken to address this.

To respond to the ongoing business need for policy analysts and socio-economists and to off-set anticipated departures, recruitment of these employees is being managed at a high level through collective staffing, as well as through our [Policy Analyst Recruitment and Development Program](#).

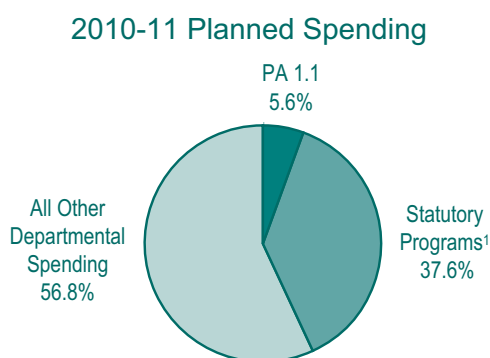
Our physical assets

The [move of the CANMET Materials Technology Laboratory](#) at the McMaster Innovation Park in Hamilton, Ontario, will greatly enhance our capacity to undertake S&T activities in support of our business objectives while strengthening our partnerships with the industry and academia.

Office space in the National Capital Region comprises the majority of our physical assets that support our policy/economic analysts and further this program activity.

Our finances

Our planned spending for this program activity in 2010-11 is \$240.6M. This amount will decrease in the following years (30% decline in 2011-12 and 50% in 2012-13 from 2010-11 levels), due mostly to the end of forestry market and diversification programs.



¹ Statutory programs refer to the Atlantic Offshore Accords statutory payments. See page 27 for more information.

HOW WE ARE MEASURING SUCCESS

Three performance indicators have been set, namely:

- Capital investments and exploration investments in the resource sectors;
- Diversity of Canada's forest products exports; and
- Performance of programs, i.e. achieving expected results within plans, timelines and budgets.

(The target for the third indicator is a favourable trend over the long term. The first and second indicators may respond to other influences more immediately [e.g. world and domestic economic growth or the activities of other levels of government]).

MANAGING RISKS

Our objectives for this and all other PAs could be impacted by a range of notable risks. These risks are being actively monitored and managed to ensure that the department's potential exposure is within acceptable limits, a standard that varies according to the importance of the objective, the scope of the department's ability to mitigate or control the risk, and the cost of risk mitigation and control.

Some narrowly defined yet important objectives of our suite of programs in response to forest sector transformation are at risk due to the persistence of poor global economic conditions (generically: *socio-*

economic factors). In addition, the renewal and relocation of CANMET-MTL has time and budget vulnerabilities that are typical for capital projects of this magnitude (generically: *critical path issues*). Finally, power supply disruptions or power generation incidents of national scope – for which

we have certain emergency management responsibilities – could impact the economic competitiveness of the resource sector (generically: *acute incidents*). All of these sector-specific risks are in the medium to medium-high range.

Programs and initiatives in support of PA 1.1 are structured around seven sub-activities. These are listed below, along with key deliverables for 2010-11.

<p>1.1.1 Minerals and Metals, Markets, Investment, Innovation and Productivity LEAD SECTOR: MINERALS AND METALS SECTOR (MMS)</p>	<ul style="list-style-type: none"> Continue to develop and implement policies and programs that maximize the benefits of Canada's minerals and metals endowment in a manner that improves the sector's competitiveness and productivity in both a sustainable and a responsible manner. This is achieved through strengthening existing partnerships and developing new collaborative relationships for S&T research by MMSL and MTL (e.g. Green Mining Initiative), as well as work underway with CMIC, CIM and other R&D institutions involved in minerals, metals and materials. Improve competitiveness of the industry through the value chain with particular focus on declining base metal reserves, investing in state-of-the-art facilities (e.g. completion of new MTL relocation) and implementing with DFAIT and CIDA Canada's Advantage: Corporate Social Responsibility Strategy. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$36,243</p>
<p>1.1.2 Securing Forest Product Markets LEAD SECTOR: CANADIAN FOREST SERVICE (CFS)</p>	<ul style="list-style-type: none"> Continue to develop, implement and deliver programs that increase the demand for Canada's wood products through diversification of geographic markets and expansion of end uses (i.e. Canada Wood Export Program, North American Wood First Program, Wood Demonstration Program, Value to Wood Program, and Leadership for Environmental Advantage in Forestry Initiative). <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$43,371</p>
<p>1.1.3 Advancing Forest Product Innovation LEAD SECTOR: CFS</p>	<ul style="list-style-type: none"> Provide funding for research focused on the development of breakthrough technologies and productivity improvements. In collaboration with the Forest Products Association of Canada, complete a study of the economic and biological trade-offs between various existing and potential forest products. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$89,013</p>

<p>1.1.4 Aligning Forest S&T Governance LEAD SECTOR: CFS</p>	<ul style="list-style-type: none"> • Complete the consolidation of FPInnovations with a focus on transformative technologies and university networks. • Establish a benchmark for innovation by analyzing the characteristics of forest sector innovation and the use of advanced technology to guide the continued evolution of the innovation system. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$12,633</p>
<p>1.1.5 Supporting Energy and Mineral Exploration LEAD SECTOR: EARTH SCIENCES SECTOR (ESS)</p>	<ul style="list-style-type: none"> • Deliver final Targeted Geoscience Initiative – three products. • GEM: Continue data releases from geophysical surveys, geological mapping, sedimentary basin analysis and initial hydrocarbon resource assessments, remote predictive mapping, and tri-territorial geological integrations. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$63,718</p>
<p>1.1.6 Energy Policy LEAD SECTOR: ENERGY SECTOR (ES)</p>	<ul style="list-style-type: none"> • Implement the announced restructuring of AECL and the offering of its commercial reactor division, including managing AECL funding pressures, in order to preserve the value of the asset. • Represent Canada’s energy interests at the G8 in 2010. • Publish the 2010 Energy Outlook for Canada. • Establish and finalize how carbon capture and storage will be an integral component within federal regulations and legislation related to industrial greenhouse gas emissions. • Develop a modernized regulatory regime for oil and gas activity in Canada’s Frontier Lands. • Develop a refining and oil security strategy for Canada. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$19,008</p>
<p>1.1.7 Statutory Programs – Atlantic Offshore LEAD SECTOR: ES</p>	<ul style="list-style-type: none"> • The ongoing management of the statutory requirements related to offshore petroleum in Nova Scotia and Newfoundland and Labrador. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$1,676,438</p>

PROGRAM ACTIVITY 1.2: NATURAL RESOURCE-BASED COMMUNITIES

Increased knowledge, skills and capacity to benefit from the evolving natural resource economy within resource-based communities (both Aboriginal and non-Aboriginal)

WHAT THE PROGRAM ACTIVITY IS ABOUT

This PA is targeted to increasing Canada's knowledge of the impacts of the resource sector's evolution on communities that have a substantial reliance on resource-based industries, and to improving the capacity and knowledge to increase the number of opportunities through value-added products and services.

MOVING FORWARD

As communities throughout the country, particularly resource-based ones, cope with new economic realities, they are increasingly looking to diversify their economies. We are working in conjunction with other federal departments and agencies to support them in this transition. We are providing expert advice, undertaking site-specific research and technology development, and supporting multi-stakeholder networks and partnerships in order to build capacity and enhance economic opportunities.

In particular, we support community-level-forest-based partnerships across Canada through our [Forest Communities Program](#)^{*}, and we develop strategies to enable communities to take advantage of emerging opportunities and adjust to transition. With our community-level partners, the [Canadian Model Forest Network](#) and other forest stakeholders, we develop and share knowledge, tools and best practices that benefit communities. We are also collaborating with other federal departments and agencies in developing and implementing new Aboriginal forestry partnership initiatives^{*}, aligned with the government's [Aboriginal Economic Development Framework](#) and focused on emerging and lasting, regional-scale, forest-based opportunities across the country. To that effect, we support the [Whitefeather Forest Management Initiative](#) in northern Ontario and "local-supply, local-labour," First Nations' housing initiatives in Manitoba.

Finally, we provide knowledge and information about sustainable mining practices to enhance the competitiveness and viability of site-specific mining operations. In collaboration with provinces, territories, industries and other stakeholders, we are working to identify opportunities for future improvements that will positively impact resource-based communities^{*} by conducting a performance review of the mining sector over the past decade.

HOW WE ARE WORKING TO ACHIEVE THIS

Our people

As our activities are in direct support of communities – conducting site-specific research and building networks and partnerships – our workforce is mostly based in the regions. Critical gaps in the forestry research occupational groups have been identified and are being addressed through specific staffing actions. In recruiting program managers and socio-economic and policy analysts, we have an opportunity to ensure that our workforce is representative of the communities it supports, particularly in the case of Aboriginal communities.

Our finances

Our planned spending for this program activity in 2010-11 is \$11.8M. The majority of the government-sponsored programs in support of communities – e.g. the Community Development Trust, the Community Adjustment Fund, and the [Aboriginal Economic Development Framework](#) – are administered by regional

development agencies and other federal departments, with NRCan providing support as needed.

HOW WE ARE MEASURING SUCCESS

Two performance indicators have been set, namely:

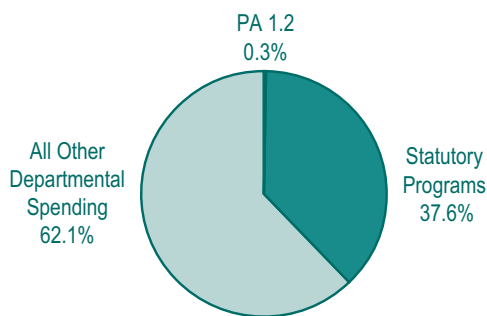
- Resource sector employment attributable to NRCan programming; and
- Performance of programs, i.e. achieving expected results within plans, timelines and budgets.

(Target for all indicators is for a favourable trend over the long term).

MANAGING RISKS

The scope of our potential impact on resource-based communities is highly dependent upon the effectiveness of our relationships with key stakeholders, including those that are community-based, as well as other government departments with mandates that are more central to this area. As the interests and capacities of these stakeholders evolve, so too there is a medium to medium-high risk for misalignment of our programming (generically: *stakeholder relations*).

2010-11 Planned Spending



Programs and initiatives in support of PA 1.2 are structured around two sub-activities. These are listed below, along with key deliverables for 2010-11.

<p>1.2.1 Minerals and Metals in support of Communities LEAD SECTOR: MMS</p>	<ul style="list-style-type: none"> • Conduct and present to EMMC in fall 2010 a performance review of the mining sector to examine and document the performance of the mining sector in Canada over the last ten years. Specifically, this initiative will document where environmental, social and environmental performance has improved, as well as identifying possible opportunities for future improvements. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$842</p>
<p>1.2.2 Forest-based Community Partnerships LEAD SECTOR: CFS</p>	<ul style="list-style-type: none"> • Develop research products focused on baseline forest community capacity indicators, trends and emerging forest-based opportunities. • Provide expert policy advice to other government departments and partners involved in developing and delivering forest community transition. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$10,953</p>



STRATEGIC OUTCOME 2: ENVIRONMENTAL RESPONSIBILITY

Canada is a world leader on environmental responsibility in the development and use of natural resources.

The success and performance of this strategic outcome will be measured by the following indicators:

- Canada's total annual energy savings due to efficiency; and
- Contribution to advancement of innovative and environmentally responsible practices in the resource sector measured by uptake of knowledge, technologies and demonstration projects.

Its achievement will be supported by two Program Activities:

2.1 Clean Energy

2.2 Ecosystem risk management

STRATEGIC OUTCOME 2: ENVIRONMENTAL RESPONSIBILITY

	SHORT-TERM OUTCOMES	MEDIUM-TERM OUTCOMES	LONG-TERM OUTCOMES
2.1 CLEAN ENERGY	<p>Promoting clean energy through the innovative use of materials mining and metals.</p> <p>Analysis and advice that supports the development of measures designed to reduce greenhouse gas and air pollutant emissions, and the advancement of Canada's positions on climate change and clean energy in international fora.</p> <p>Increasing Canada's renewable energy supplies and making clean renewable electricity and heat more available and less expensive for Canadians.</p> <p>Canadians derive new economic, environmental and social benefits through federal energy S&T.</p> <p>Improved energy efficiency in all sectors and increased production and use of alternative transportation fuels.</p> <p>Investments in innovation and technology contribute to an environmentally and commercially sustainable pulp and paper industry in Canada.</p>	<p>Increased energy efficiency, increased production of low-emission energy, and reduced environmental impacts associated with energy production and use.</p>	<p>Canada is a world leader on environmental responsibility in the development and use of natural resources.</p>
2.2 ECOSYSTEM RISK MANAGEMENT	<p>Environmental assessment, technologies and practices support sustainable development.</p> <p>Knowledge of Canada's forest ecosystems informs and influences decision making.</p> <p>Earth science data, and resource and environmental assessments are used in major project reviews, development of health policies and groundwater management.</p> <p>Radioactive waste management practices that meet modern-day standards for safety and environmental protection for historic wastes, legacy wastes, and uranium mine and mill tailings.</p>	<p>Canada understands and mitigates risks to natural resource ecosystems and human health.</p>	

VISION: IMPROVING THE QUALITY OF LIFE OF CANADIANS BY CREATING A SUSTAINABLE RESOURCE ADVANTAGE

PROGRAM ACTIVITY 2.1: CLEAN ENERGY

Increased energy efficiency, increased production of low-emission energy, and reduced environmental impacts associated with energy production and use

WHAT THE PROGRAM ACTIVITY IS ABOUT

This PA encompasses the development and delivery of energy science and technology, policies, programs, legislation and regulations to reduce greenhouse gas (GHG), air pollutant emissions and other environmental impacts associated with energy production.

MOVING FORWARD

In focusing its efforts to make Canada a clean energy superpower, the government has

DID YOU KNOW?

NRCan undertakes research on advanced vehicle technologies, including hydrogen fuel cells, plug-in hybrid electric vehicles, emission reduction technologies and advanced fuels. The objective is to accelerate the development and market readiness of technology solutions and contribute to a reduction of GHG emissions and other pollutants.

recognized the key role clean energy can play in the transformation to a green economy, simultaneously providing economic and environmental benefits to Canadians. The Clean Energy PA is instrumental in helping achieve this in the short and long term, through activities that improve energy efficiency, increase the availability of renewable and nuclear energy, and support the development and use of cleaner fossil fuels and alternatives.

Working with other federal, provincial, industry and academic partners, we undertake projects and activities in clean energy systems for buildings and communities; clean electric power generation; clean energy systems for industry; clean transportation energy; environmentally sustainable oil and gas development; and bioenergy. Energy S&T contributes to improving energy efficiency in every sector of the economy – homes, commercial buildings, vehicles – and increases the production of low-impact renewable energy.

The Clean Energy Fund*♦ supports research to reduce GHG emissions from energy production and use, including research on cleaner fossil fuels (e.g. carbon capture and storage) and renewable energy.

The suite of ecoENERGY programs and regulatory improvements aims to improve the energy efficiency and increase the production and use of alternative transportation fuels to further limit GHG emissions.

The [ecoENERGY for Renewable Heat and Power](#) program, for example, contributes to the increase of renewable energy sources to Canada's energy mix by providing production incentives to businesses, municipalities, organizations and institutions. Programming is instrumental in encouraging the industrial, commercial and institutional sectors' use of solar energy systems and in increasing the supply of renewable electricity – e.g. wind, biomass, low-impact hydro, geothermal, solar photovoltaic and ocean energy – to the electrical grid.

The [ecoENERGY Technology Initiative](#)* funds research and development on the next-generation, clean-energy technologies, including renewable energy from clean sources such as wind, solar, tidal and biomass. Research also focuses on increasing the clean energy supply and reducing energy waste and pollution from conventional energy sources.

The [ecoENERGY for Biofuels](#) program supports the production of renewable alternatives to gasoline and diesel, and encourages the development of a competitive renewable fuels' industry in Canada by providing incentives directly to new and existing producers.

Targeting Canadians more directly, the [ecoENERGY for Buildings and Houses](#) and [ecoENERGY Retrofit – Homes](#) programs*♦ promote and increase the energy efficiency of new and existing housing and buildings in Canada, helping homeowners in the construction and retrofit of energy-efficient

DID YOU KNOW?

The [2010 Fuel Consumption Guide](#) provides model-specific fuel consumption information to help Canadian motorists select the most fuel-efficient vehicle to meet their needs. It also provides information to help them drive and maintain their vehicles with fuel efficiency in mind.

houses through grants, financial assistance and outreach. The [EnerGuide](#) and [Energy Star](#) provide energy efficiency regulations and labelling. Both [ecoENERGY for Industry](#) and [ecoENERGY Retrofit – Small and Medium Organizations](#) facilitate the energy retrofit of industries and small and medium sized commercial and industrial buildings in Canada. In addition, [ecoENERGY for Personal Vehicles](#) and [ecoENERGY for Fleets](#) encourage more fuel-efficient purchasing decisions and vehicle operation.

We are working to enhance the environmental and commercial sustainability of the pulp and paper industry through the [Pulp and Paper Green Transformation Program](#)*. The objective is to improve the industry's overall environmental performance and support capital investments that focus on energy efficiency and the production of renewable energy at pulp and paper mills across Canada.

Through the [Vehicle Structural Materials Program](#)* and in partnership with universities and industry, we are working to develop advanced materials, technologies and processes that improve energy efficiency and enable clean energy systems. Research advances will benefit the nuclear reactor and the automotive sectors, leading, for example, to a next generation of vehicles that are stronger and lighter, thereby contributing to the reduction of GHG emissions associated with the combustion of fossil fuels. New materials for the Gen IV reactor systems will also be developed, and spin-off research will contribute to clean fossil power and the development of high-temperature energy systems.

Finally, we provide expert advice, analysis and leadership in support of Canada's efforts to reduce the environmental impacts of energy production and use, including [climate change](#). We also work closely with stakeholders, partners and other government departments in providing analysis and policy input for the development and articulation of Canada's positions and policies on international [climate change](#), both inside and outside the [United Nations Framework Convention on Climate Change](#).

HOW WE ARE WORKING TO ACHIEVE THIS

Our people

Part of our workforce in this program activity is conducting science, and there is a constant need to recruit to meet new program requirements and off-set retirements. Positions are often highly specialized, and scientists are expected to acquire and continually increase their knowledge and

level of expertise to meet technological advances, particularly in the energy technology field. Training and learning opportunities will be crucial to achieving this. As highly specialized needs make it difficult to create or draw on common pools, recruitment activities are mostly focused on on-campus recruitment, co-operative student placements and post-doctoral fellowships.

At the same time, we are increasingly looking for employees who can link policy with S&T, building a strong workforce that connects our research activities with our business objectives. This is particularly important as we renew our management cadre in the science-based areas.

Given that this PA is heavily focused on providing incentives, grants and contributions (it represents 39% of departmental spending but uses only 20% of our workforce), an important component of our workforce professionals specializes in contract management. Common competencies in these groups, as well as in the policy and socio-economic groups, allow for the use of collective staffing processes to meet new program demands and mitigate the risks of departures.

Our physical assets

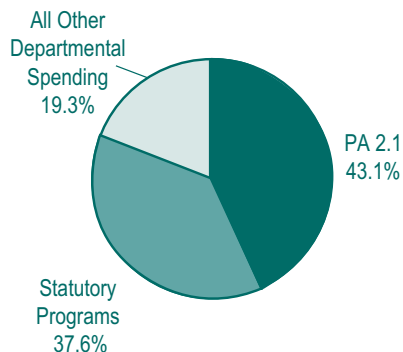
The CanmetENERGY laboratories, located in Varennes, Quebec; Ottawa, Ontario; and Devon, Alberta, are home to 450 scientists, engineers and technicians, who conduct leading-edge research and S&T on clean energy and technology development. Deferred maintenance will be conducted this year to ensure on going asset integrity. The incorporation of environmental initiatives,

such as the installation of a photovoltaic system, will provide clean electricity while reducing operating costs and greenhouse gas emissions. Further infrastructure investments will allow scientists to pursue additional research and S&T opportunities that are not currently available due to facility inadequacies.

Our finances

Planned spending for this PA in 2010-11 is \$1,918.7M. This represents a significant increase from the previous year (130%), due to the implementation of the [Pulp and Paper Green Transformation Program](#) and increased funding for the [Clean Energy Fund](#), the [Clean Energy Agenda](#), [ecoENERGY Retrofit](#), and [ecoENERGY for Biofuels](#).

2010-11 Planned Spending



HOW WE ARE MEASURING SUCCESS

Three performance indicators have been set, namely:

- Clean energy production & GHG reductions attributable to NRCan programming;
- NRCan's contribution to the advancement of clean energy knowledge, and uptake of innovative clean energy solutions; and

- Performance of programs, i.e. achieving expected results within plans, timelines and budgets.

(Target for all indicators is for a favourable trend over the long term).

MANAGING RISKS

Across this PA we are managing a medium-level risk pertaining to the long-term relevance and excellence of our S&T establishment. Several factors contribute to this risk, including the high proportion of short-term sunset funds, the challenge of attracting and retaining highly qualified personnel in an increasingly tight labour market, and the undercapitalization of our asset base, including specialized facilities and equipment (generically: *alignment of management practices with objectives and access to limited and specialized resources*).

Other more narrowly defined but important objectives of our suite of energy efficiency programs are at medium to medium-high risk due to changes in domestic economic conditions that could either depress or greatly expand demand for program outputs such as home retrofit grants (generically: *socio-economic factors*). In addition, and at a medium-high level of risk, the objectives and structure of NRCan's energy programming could be significantly impacted by the evolution of the international and domestic legal and regulatory framework for greenhouse gas (GHG) emissions (generically: *evolving legal/regulatory frameworks*).

Programs and initiatives in support of PA 2.1 are structured around six sub-activities. These are listed below, along with key deliverables for 2010-11.

<p>2.1.1 Materials for Production and Transportation of Energy and Energy-efficient Vehicles LEAD SECTOR: MMS</p>	<ul style="list-style-type: none"> • Vehicle Structure Materials Program: research for clean energy solutions for the automotive and the nuclear sectors based on high performance, new or improved lightweight materials, ultra high-strength steel and other innovations. • Research Program on Materials for Nuclear and Conventional Energy: climate change adaptation technologies developed; ecological reclamation habitat restoration developed; and technologies to sustain biodiversity developed. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$3,550</p>
<p>2.1.2 Clean Energy Policy LEAD SECTOR: ES</p>	<ul style="list-style-type: none"> • Ongoing provision of analysis and advice on regulations dealing with major industrial emitters, domestic and international climate change developments, and other environmental impacts of energy production and use. • Continued development of climate change and clean energy policies, and implementation of accountability and reporting frameworks. • Alignment of international climate change policies and negotiating positions with Canada’s domestic energy and other natural resource interests and with Canada’s domestic climate change policies. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$5,233</p>
<p>2.1.3 Renewable Energy LEAD SECTOR: ES</p>	<ul style="list-style-type: none"> • Implement the Electricity Working Group Action Plan under the Clean Energy Dialogue. Planned projects include a Canada–U.S. forum on building the power workforce of tomorrow, a study on energy storage, a workshop on electricity trade barriers, and a smart grid conference. • Develop and implement the terms of reference/work plan for the Atlantic Energy Gateway. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$145,908</p>

<p>2.1.4 Energy Science and Technology LEAD SECTORS: ES & Innovation and Energy Technology Sector (IETS)</p>	<ul style="list-style-type: none"> • Publish an Electric Vehicle Technology Roadmap. • Progress reports on research, development and deployment concerned with developing technologies to reduce the cost and increase the efficiency of carbon capture and storage (CCS). • Progress report on development of a GIS-based biomass availability tool and inventory. • As part of the Clean Energy Dialogue, advance projects and hold workshops for CCS and Clean Energy research and development. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$320,841</p>
<p>2.1.5 Energy Efficiency and Alternative Transportation Fuels LEAD SECTOR: ES</p>	<ul style="list-style-type: none"> • Continue promoting energy efficiency in the buildings, houses, equipment, industrial and transportation sectors, as well as the use of alternative transportation fuels through the OEE's suite of ecoENERGY initiatives and related programs. • Work toward meeting program targets for the current suite of programs, design and obtain approval for future programs, and provide ongoing analysis and advice on energy efficiency. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$820,251</p>
<p>2.1.6 Energy-based Sustainability in Pulp and Paper LEAD SECTOR: CFS</p>	<ul style="list-style-type: none"> • Complete the negotiation of contribution agreements with recipient firms to support capital investments in the pulp and paper industry, leading to enhanced environmental performance. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$641,855</p>

PROGRAM ACTIVITY 2.2: ECOSYSTEM RISK MANAGEMENT

Canada understands and mitigates risks to natural resource ecosystems and human health

WHAT THE PROGRAM ACTIVITY IS ABOUT

This PA is designed to promote alternative technologies and practices in green technologies and mining; an understanding of forest dynamics; appropriate approaches for the long-term management of radioactive waste; and the provision of sound scientific advice to support sustainable resource management initiatives. It aims to balance environmental and social concerns against economic prosperity.

MOVING FORWARD

NRCAN will continue to support the government's responsibility to ensure that Canada understands and mitigates the risks

to the natural resource ecosystems and human health. This is particularly important as the effects of climate change are being felt in different parts of the country.

We provide the foundational scientific information regarding Canada's forest ecosystems at the international and national levels, and ensure that maintaining economic competitiveness does not come at the cost of maintaining environmental integrity. Activities to achieve this end include understanding the nature and extent of Canada's forests and their resilience to impacts – natural and human-induced – as well as forecasting the disturbances to forests and impacts on them, particularly in view of a changing climate*. We will continue to improve forest carbon scientific information and science-based modelling, reporting and policy advice, and will fulfill Canada's forest-related, climate change reporting obligations under the [United Nations Framework Convention on Climate Change](#).

As the host to the [International Model Forest Network](#), we work with partners in over 30 countries to promote sustainable forest management at the local level and advance a broader international agenda for the responsible development and use of forest resources.

Our geoscience knowledge and expertise is used to support sound environmental stewardship when conducting environmental assessments on development projects, and major energy and mineral resource

DID YOU KNOW?

Through its emerging international [Carbon Budget Model](#), NRCAN maintains the [National Forest Carbon Monitoring and Report System](#), which estimates, reports and documents the greenhouse gas emission and removal in Canadian forests.

assessments. The objective is to ensure that adverse environmental impacts are identified and mitigated; inform decisionmaking; and provide for a balanced approach to conservation and economic development. Through its research activities, the Environmental Geoscience program will generate scientific knowledge required by regulators and project proponents to make informed decisions related to ecosystems' risk characterization and mitigation, due to energy and mineral resource development and use.

Our [Groundwater Program](#) focuses on producing a national groundwater inventory that will enhance Canada's capacity for informed groundwater decision making. In collaboration with the provinces and territories, assessments have been completed for 12 of Canada's 30 key regional [aquifers](#). Mapping will continue on the remaining 18 (including working with partners to develop common protocols and standards) to help us to more fully understand this vital resource so that it can be better managed and sustained*. In addition, we provide input into the development of provincial and territorial groundwater management frameworks for projects such as the Athabasca Oil Sands Region.

On the nuclear management front, we are working to mitigate the risks to the environment and human health through the Radioactive Waste Management programs. These include the [Nuclear Legacy Liabilities](#)

DID YOU KNOW?

As part of the Green Mining Initiative, a research project is underway to assess the use of organic wastes from municipalities or the forestry sector to cover tailing areas, both suppressing acid generation and creating a soil on which to grow biofuel crops. Field test sites are now in operation throughout the country.

[Program](#), a long-term strategy (70 years out) to deal with legacy decommissioning and radioactive waste liabilities at AECL sites, including the implementation of long-term solutions for the management of associated wastes (through the [Nuclear Waste Management Organization](#)), as well as ongoing efforts for the clean-up of historic wastes in the Port Hope, Ontario, area and elsewhere in Canada.

Finally, through the [Green Mining Initiative](#) – a multi-stakeholder partnership – we will develop, identify and promote the use of green technology in mining, with the objective of enabling a competitive and greener resource sector. Research and outreach activities will aim to reduce ecosystem risks from mining and encourage and improve sustainable best practices.

Our focus for the next year will be on four main research themes: footprint reduction; innovation in waste management; ecosystem risk management; and mine closure and rehabilitation.

HOW WE ARE WORKING TO ACHIEVE THIS

Our people

Our workforce in this PA is mostly made up of ecosystem and earth sciences scientists and technical experts. Challenges, as in other highly specialized science areas, are around the recruitment of these experts to off-set retirements. There is an opportunity to reduce the representation gaps, particularly of women, when conducting our recruitment activities.

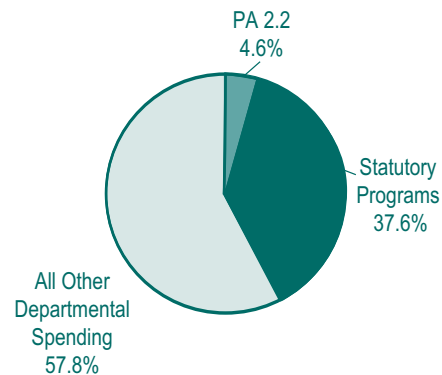
Our physical assets

To support our R&D activities in mining technologies, processing and related environmental issues, we operate mining and minerals science laboratories in Ottawa and Sudbury, Ontario, as well as a pilot demonstration mine in Val D'Or, Quebec. Maintenance work is scheduled to take place in the coming year in the Ottawa laboratory to upgrade facilities and address some more immediate health and safety requirements.

Our finances

Planned spending for this PA in 2010-11 is \$205.7M. This is anticipated to decrease by 57% in 2011-12 due to lower planned spending for the [Nuclear Legacy Liabilities program](#).

2010-11 Planned Spending



HOW WE ARE MEASURING SUCCESS

Three performance indicators have been set, namely:

- NRCan's contribution to federal environmental assessment and reporting processes;
- NRCan's contribution to advancement of ecosystem knowledge and innovative ecosystem risk management solutions; and
- Performance of programs, i.e. achieving expected results within plans, timelines and budgets.

(Target for all indicators is for a favourable trend over the long term).

MANAGING RISKS

Across this PA we are managing a range of medium to medium-high level risks pertaining to the challenges of bringing to bear best-available scientific and technical evidence on ecosystem risk management questions (generically: *alignment of management practices with objectives*). In particular, we are often called upon to address relatively short-term and pressing

problems, as well as issues ranging from forest pest epidemics to the establishment of national park boundaries; however, our response may of necessity be based on only a partial scientific understanding due to the long time horizons necessary to develop a

fuller understanding. Related to this are the challenges of ensuring due consideration of the best-available scientific and technical evidence in such complex socio-economic and environmental issues as the long-term management of nuclear legacy liabilities.

Programs and initiatives in support of PA 2.2 are structured around four sub-activities. These are listed below, along with key deliverables for 2010-11.

<p>2.2.1 Strong Environmental Performance in Minerals and Metals LEAD SECTOR: MMS</p>	<ul style="list-style-type: none"> • Continue to implement the NRCan multi-stakeholder Green Mining Initiative that promotes and develops ongoing improvements in the environmental performance of the industry and accelerates the development of alternative technologies and methods that support green mining. This includes continuing to work on four interconnected themes linked to environmental protection, remediation and recovery under this initiative. Footprint reduction, Innovation in waste management, Ecosystem risk management, and Mine closure and rehabilitation. • Conduct Environmental Assessments, which are based on sound science, best practices and technologies; supported by stakeholders; and completed as planned, meeting service standards and commitments. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$6,843</p>
<p>2.2.2 Forest Ecosystems Science and Application LEAD SECTOR: CFS</p>	<ul style="list-style-type: none"> • Develop a forest carbon science plan that provides a national vision of key forest carbon research questions over the long term. • Work toward providing a national risk analysis framework for forest biodiversity that will help identify ecosystem vulnerabilities and strengthen decision making in planning and science investment. • Through the African Model Forest Initiative, work towards developing a network in the Maghreb and Congo Basin regions. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$27,642</p>

<p>2.2.3 Environmental Geoscience LEAD SECTOR: ESS</p>	<ul style="list-style-type: none"> • Contribute to the government’s response to the Panel report on the Mackenzie Gas Project environmental assessment (EA) and to the GoC’s technical EA review and follow-up of development projects, including Bute Inlet Hydroelectric, Deep Geologic Respository, Naikun Wind Farm and Star-Orion South Diamond. • Complete three new groundwater aquifer assessments to bring the completed total to 15 of 30 key regional aquifers mapped, in cooperation with the provinces and territories. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$11,488</p>
<p>2.2.4 Radioactive Waste Management LEAD SECTOR: ES</p>	<ul style="list-style-type: none"> • Seek government approval for the implementation phase of the Port Hope Area Initiative. • Obtain approval for the launch of the second phase of the Nuclear Legacy and Liability Program. • Complete the first phase of the Gunnar cleanup and decommissioning plan. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$148,728</p>



An aerial photograph of a mountainous region, likely in Canada, showing a dense forest covering the slopes and a river valley winding through the center. The image is overlaid with a semi-transparent teal filter.

STRATEGIC OUTCOME 3: SAFETY, SECURITY AND STEWARDSHIP

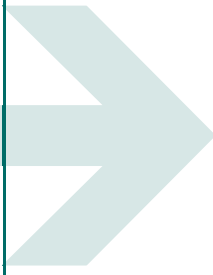
Natural resource knowledge, landmass knowledge and a management system strengthen the safety and security of Canadians and the stewardship of Canada's natural resources and lands.

The success and performance of this strategic outcome will be measured by the following indicator: Contribution to the safety and security of Canadians, and the effectiveness of federal land stewardship and regulatory processes.

Its achievement will be supported by three Program Activities:

- 3.1 Adapting to a Changing Climate and Hazard Risk management
- 3.2 Natural Resources and Landmass Knowledge and Systems
- 3.3 Geomatics Canada Revolving Fund

STRATEGIC OUTCOME 3: SAFETY, SECURITY AND STEWARDSHIP

	SHORT-TERM OUTCOMES	MEDIUM-TERM OUTCOMES	LONG-TERM OUTCOMES
3.1 ADAPTING TO A CHANGING CLIMATE AND HAZARD RISK MANAGEMENT	<p>Safety and security of Canadians are improved with respect to mining pipeline infrastructure and explosives. Forest stakeholders are equipped to respond appropriately to forest disturbances opportunities and threats.</p> <p>The risks and opportunities due to the impacts of climate change on Canada's lands, coasts and economic sectors are assessed, and adaptations are incorporated into plans, strategies or guidelines.</p> <p>In emergencies related to earthquakes, floods, landslides, radiological hazards and geomagnetic storms, geoscience and geographic information support the management of those emergencies, and help develop long-term mitigation strategies. Canadian obligations are met in monitoring nuclear test blasts.</p>	<p>Canada adapts to a changing climate and has the knowledge and tools to manage risks associated with natural hazards and hazards arising from human activities.</p>	 <p>Natural resource knowledge, landmass knowledge and management systems strengthen the safety and security of Canadians and the stewardship of Canada's natural resources and lands.</p>
3.2 NATURAL RESOURCES AND LANDMASS KNOWLEDGE SYSTEMS	<p>Knowledge and statistics information supports evidence-based decision making and is readily available to the public. Geographic information essential to governing Canada is managed, available and used, including legal and geodetic surveys of Canada, the international boundary with the United States, the extension of Canada's coastal zone rights under the UN Convention of the Law of the Sea, and topographic maps information and remotely sensed data; and the understanding of Canada is promoted through the Atlas of Canada and the maintenance of place names in Canada.</p> <p>High-quality, predictable and timely environmental assessment and regulatory reviews.</p> <p>Aboriginal consultation responsibilities are fulfilled in a consistently adequate and meaningful manner.</p>	<p>Government has the necessary natural resource and landmass knowledge and systems required to both govern the country and position Canada to play a leadership role in federal/provincial/territorial and international fora.</p>	
3.3 GEOMATICS CANADA REVOLVING FUND		<p>The demand by NRCan, other government departments and industrial clients for RF products and services is met through a full cost recovery.</p>	

VISION: IMPROVING THE QUALITY OF LIFE OF CANADIANS BY CREATING A SUSTAINABLE RESOURCE ADVANTAGE

PROGRAM ACTIVITY 3.1: ADAPT TO A CHANGING CLIMATE AND HAZARD RISK MANAGEMENT

Canada adapts to a changing climate and has the knowledge and tools to manage risks associated with natural hazards and hazards arising from human activities

WHAT THE PROGRAM ACTIVITY IS ABOUT

This PA provides scientific knowledge and expertise to help the government, private sector and communities mitigate and adapt to the potential effects of a changing climate, reduce risks to Canadians and support emergency response in the event of natural and man-made hazards. The PA ensures that regulations related to explosives and fireworks are evidence-based and enforced.

MOVING FORWARD

How Canada responds to the changing climate and manages risks from natural and man-made hazards has a significant impact on the safety and security of Canadians and the stewardship of Canada's natural resources and lands. By developing a greater understanding of hazards, NRCan facilitates government response in times of crisis and informs the development of long-term mitigation strategies.

We are responsible for regulating, licensing and inspecting the manufacture, storage, sale and possession of [explosives and fireworks](#).

Moreover, we are working to update the [explosives regulations](#) to reflect modern industrial practices while protecting workers and the general public. Actions have already been taken to address gaps in the regulatory framework, including implementing the [Restricted Components Regulations](#) and partnering with the industry to strengthen explosives security through the [Explosives Security Partnership](#).

Our research activities on [pest](#) and [fire management](#) contribute to ensuring the safety and security of Canadians and the stewardship of natural resources. We coordinate national and intergovernmental strategies for the management and mitigation of forest disturbances and provide ongoing scientific capacity and expertise on the matter. This includes responding to native and naturalized pests (e.g. [Eastern Spruce Budworm](#)) and forest invasive alien insect pests (e.g. [Emerald Ash Borer](#)), as well

DID YOU KNOW?

In 2008, 25 NRCan scientists shared the Nobel Peace Prize as part of a team of authors of the [Intergovernmental Panel on Climate Change's 2007 Assessment Report](#).



DID YOU KNOW?

NRCan contributed to the safety of the 2010 winter Olympics in Vancouver by monitoring critical facilities and providing technical support to security agencies.

as continuously assessing the risks and mitigating the impacts of, and managing, wildland fires (in collaboration with provinces, other departments and agencies, and stakeholders).

We are enhancing and leveraging our knowledge in order to assess the impacts, risks and opportunities of climate change. This knowledge is used to develop mitigation and adaptation strategies, in collaboration with partners and stakeholders. For example, we conduct studies on the sensitivity and response of Canada's landmass and coastal areas to a changing climate. Our geoscience data on permafrost degradation, rising sea levels and coastal erosion is used to understand the impacts of climate change. In addition, research on the risks and impacts of climate change on Canada's forests and ecosystems is used to identify new adaptation

policies and practices and risk mitigation strategies. The focus of current and upcoming activities will be on changes to permafrost, glaciers, land use, sea levels and the forests.

In collaboration with other government departments, we are delivering on the Regional Adaptation Collaborative program, which will help Canadians develop approaches to adapt to climate change specific to their region. We are delivering tools to facilitate adaptation in targeted sectors, including engineering and planning. Moreover, tools and methodologies will be developed to allow various private and public sector stakeholders to integrate climate change adaptation strategies. In addition, an accessible knowledge base will be created to assist in determining how climate change will affect Canadians – our land, our communities and our economic activities.

Furthermore, our expertise in geosciences and climate change impacts is leveraged for public safety purposes. We continuously monitor [earthquakes](#), [volcanic eruptions](#), [landslides](#), [geomagnetic storms](#), radiological and [nuclear incidents](#), and predict [tsunamis](#). This expertise contributes to supporting management in the event of emergencies, but most importantly, allows the government and organizations to prepare for, and mitigate, natural disasters and reduce losses.

HOW WE ARE WORKING TO ACHIEVE THIS

Our people

This PA is very people-focused: employees contributing to its activities represent 13% of our total workforce, whereas its budget is only 1% of our total program spending. Employees are primarily scientists and technicians, who work across the country in areas as varied as explosives, climate change, fire behaviour and seismology. Recruitment through common processes is difficult due to the high level of specialization required. Focus is thus put on post-doctoral fellowships, co-operative internships, the [Policy Analyst Recruitment and Development program](#), as well as the [Research Affiliate Program](#), to recruit new hires. Where possible, cross-training of staff is encouraged to develop a more flexible workforce that better responds to business needs.

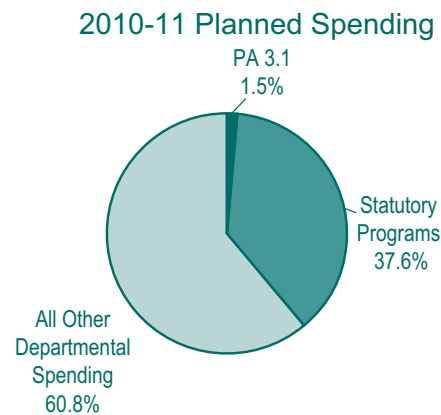
Our physical assets

In order to enhance research on alien forest insects, we are partnering with the Ontario Ministry of Natural Resources to build a state-of-the-art Invasive Species Centre as part of the Great Lakes Forestry Centre in Sault Ste. Marie, Ontario. Research at the new centre will allow us to better assess risks, forecast impacts and propose mitigation and adaptation strategies as they relate to alien forest insects. Our staffing levels should remain the same, as employees of the [Great Lakes Forestry Centre](#) use these more modern facilities.

The [Canadian Explosives Research Laboratory](#), located in Ottawa, Ontario, provides internationally recognized explosives S&T support for our work on explosives regulation and for other government departments (Public Works and Government Services Canada; Department of Foreign Affairs and International Trade; Royal Canadian Mounted Police; and Transport Canada) engaged in work related to explosives safety and security. Maintenance work is scheduled to take place in 2010-11 to upgrade equipment and improve the operating and environmental performance of explosives S&T activities in support of the [Explosives Act](#), its regulations, and the [Transportation of Dangerous Goods Act](#).

Our finances

Planned spending for this PA in 2010-11 is \$68.6M.



HOW WE ARE MEASURING SUCCESS

Three performance indicators have been set, namely:

- NRCan's contribution to the safe and secure use of explosives in Canada, as measured by inspections and advancement of knowledge in explosives S&T;
- NRCan's contribution to climate change adaptation and natural hazard risk management, as measured by the uptake of adaptation knowledge and tools, and the timeliness and accessibility of natural hazard risk management knowledge and tools; and
- Performance of programs, i.e. achieving expected results within plans, timelines and budgets.

(Target for all indicators is for a favourable trend over the long term).

MANAGING RISKS

Under this PA, and in the area of conventional explosive and precursor regulation, there are medium-low to medium level risks pertaining to implementing regulatory modernization in an area where there are pressures on the availability of highly qualified personnel and where activities are resourced on a short-term and/or volatile basis; i.e. cost recovery (generically: *alignment of management practices with objectives and access to limited and specialized resources*).

Programs and initiatives in support of PA 3.1 are structured around four sub-activities. These are listed below, along with key deliverables for 2010-11.

<p>3.1.1 Mining, Infrastructure and Explosives Safety and Security LEAD SECTOR: MMS</p>	<ul style="list-style-type: none"> Explosives regulatory modernization – a revision of the explosives regulations to reflect modern industrial practices while protecting workers and the general public; and minimizing the regulatory burden on industry. Regulate, license and inspect the manufacture, storage, sale and possession of explosives and fireworks. Actions have already been taken to address gaps in the regulatory framework, including implementing the Restricted Components Regulations and partnering with stakeholders to strengthen explosives security through the Explosives Security Partnership. Continue to pursue partnerships with key stakeholders to support the sustainability of our work on explosives security science and technology. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$10,081</p>
<p>3.1.2 Forest Disturbances Science and Application LEAD SECTOR: CFS</p>	<ul style="list-style-type: none"> Continue work on developing an enhanced Canadian Forest Fire Danger Rating System. Work to update the National Forest Pest Strategy Risk Analysis Framework as the preferred approach to forest pest decision making. Work to develop a nationally applicable framework and decision support tools that enable the integrated assessment of the risks, vulnerabilities, and opportunities that climate change poses to Canada’s forests and the forest sector. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$29,123</p>
<p>3.1.3 Climate Change Geoscience and Adaptation LEAD SECTOR: ESS</p>	<ul style="list-style-type: none"> Establish six new Regional Adaptation Collaborative programs, including a northern one. Complete climate change adaptation plans for six northern communities and several coastal communities, including Vancouver and Halifax. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$16,849</p>
<p>3.1.4 Public Safety Geoscience LEAD SECTOR: ESS</p>	<ul style="list-style-type: none"> Partner with the Japan Agency for Marine-Earth Science and Technology to deploy 30 Japanese ocean-bottom seismometers in the Cascadia Subduction Zone off the coast of British Columbia, an effort coordinated with increased instrumentation by U.S. agencies in the region. Initiate new partnerships with Defence Research and Development Canada to promote quantitative risk assessment of natural hazards, thereby contributing to the development of all-hazard risk assessments. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$12,564</p>

PROGRAM ACTIVITY 3.2: NATURAL RESOURCES AND LANDMASS KNOWLEDGE AND SYSTEMS

Canada has the natural resource and landmass knowledge to contribute to the development of the country through maps, property rights, boundary management, statistics and integrated decision making, and plays a leadership role in federal/provincial/territorial and international fora

WHAT THE PROGRAM ACTIVITY IS ABOUT

This PA delivers a strengthened resource management system, fundamental and precise geographic data to support decision making and planning processes at all levels, and an improved federal regulatory review process. It also supports the Minister's obligation to secure property rights.

MOVING FORWARD

We have a responsibility and obligation to provide Canadians and industry with access to knowledge and information on mining, metals and land. To that effect, we gather and disseminate relevant, timely and reliable statistics on mining and metals industries that are used by private sector partners (including academia) to plan business activities and research. These highly valued sources of knowledge and strong institutional arrangements between government, industry and academia can be a key component of the economic recovery.

We provide a variety of geo-referenced data, including online data, maps, satellite images, and expert knowledge and services that are used to inform policy and programs on natural resources issues as well as public health, safety and security issues. For example, we are in the process of completing a topographic map of Canada's North.

We are also very active in the definition and demarcation of Canada's international boundaries under a variety of international treaties and conventions. This core role is essential to effectively enforce customs and immigration and to ensure national security.

In fact, we are currently mapping the continental shelf to establish the scientific basis for extending our sovereign rights on the Atlantic and Arctic continental margins under the [United Nations Convention on the Law of the Sea](#)* (UNCLOS).²

The lack of regulatory efficiencies, as well as uncertainties around Aboriginal treaties and rights, negatively affect the investment climate and competitiveness of natural resources sectors. To address this issue, the [Surveyor General](#) is fulfilling Canada's obligations for demarcating the boundaries of land claim parcels, and the [Major Projects Management Office](#) (MPMO)* is

² Under UNCLOS, coastal states can use scientific data to determine the outer limits of their continental shelf beyond the customary 200 nautical miles, which would give them the exclusive rights for the exploration of the resources found within their continental shelf. The treaty allows a country 10 years from ratification to submit the scientific proof establishing the outer limits of its continental shelf. This gives Canada until 2013.

collaborating with other federal departments and agencies, and provincial governments to improve the accountability, transparency, timeliness and predictability of regulatory processes. To that effect, work is underway to enhance the predictability and clarity of processes by establishing target timelines and service standards for each major resource project, outlined as such in project agreements. Performance measures and management controls are being developed to ensure the timely resolution of project issues and a government-wide approach to Aboriginal consultation for major resource projects will be developed. The MPMO will also continue its work to improve the way environmental assessments, the regulatory permit process, and Aboriginal engagement and consultation are conducted for major resource projects. This includes identifying opportunities to improve the federal legislative and regulatory framework.

HOW WE ARE WORKING TO ACHIEVE THIS

Our people

This PA is very people-focused: employees contributing to its activities represent 15% of our total workforce, while its budget is only 2% of our total program spending. Employees are primarily scientists and technicians working across Canada. Several physical constraints (i.e. working in the North) and time challenges (short mapping season, deadline of 2013 for submitting the final

DID YOU KNOW?

The [Atlas of Canada](#) has been providing maps of Canada for over 100 years. The sixth edition, launched online in 1998, was one of the first electronic online atlases in the world. It is continually being revised and updated to reflect technological advances and the changing demographic and economic context.

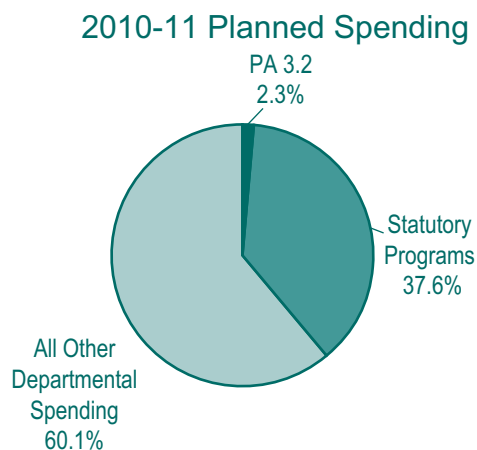
report) associated with the UNCLOS project make the management of our workforce in this area a key priority to ensure that results are achieved on time. Looking forward, we are already managing our workforce horizontally to ensure that resources are leveraged as the project ramps down over the next three years.

Our physical assets

The Polar Continental Shelf Program, through its base in Resolute, Nunavut, and through its field equipment inventory, continues to support the logistical demands of researchers in the North.

Our finances

Planned spending for this PA in 2010-11 is \$103.6M. Reduced spending is anticipated for the following years (18% in 2011-12 and 28% in 2012-13 from 2010-11 levels) due to reduced funding for the UNCLOS initiative.



HOW WE ARE MEASURING SUCCESS

Three performance indicators have been set, namely:

- NRCan's contribution to the development and security of Canada through advancements in geographic knowledge, boundary management, and surveys and supporting systems for secure land tenure of Canada Lands;
- Effective management of the federal regulatory process for major natural resource projects, as measured by adherence to target timelines and service standards by all federal departments and agencies; and
- Performance of programs i.e. achieving expected results within plans, timelines and budgets.

(Target for all indicators is for a favourable trend over the long term).

MANAGING RISKS

Two areas within this PA present notable risks. Of particular note is our ability to efficiently and effectively manage the federal regulatory process for major resource projects. There is a medium-low risk pertaining to the uncertainty of consistent implementation – across the federal government and in all regions – of the recent Cabinet Directive in this area (generically: *stakeholder relations*). In addition, there is a medium risk that the legal framework for Aboriginal consultations could evolve at a pace that challenges the adaptive capacity of the regulatory process (generically: *evolving legal/regulatory frameworks*).

In the areas of landmass information and international boundary management, we are a key partner in the horizontal initiative to collect data and meet legal requirements for delineating Canada's continental shelf in a submission to UNCLOS prior to December 2013. This effort is subject to medium level risks that typically arise in respect of the on-time and on-budget delivery of a project of this magnitude, and, in particular, one that involves High Arctic working conditions, unpredictable weather, a short field season, and both limited expertise and equipment (generically: *stakeholder relations; critical path; acute incident; and access to limited and specialized resources*).

Programs and initiatives in support of PA 3.2 are structured around three sub-activities. These are listed below, along with key deliverables for 2010-11.

<p style="text-align: center;">3.2.1 Minerals and Metals Knowledge and Information LEAD SECTOR: MMS</p>	<ul style="list-style-type: none"> • Maintain an ongoing knowledge of the minerals and mining industry through conducting various statistical surveys, including an Annual Census of Mines, current and projected exploration statistics, mineral and metal use information as well as trade data. This activity is conducted in collaboration with provinces and territories in a synergistic manner with no duplication. • Publish annually minerals and metals information and analyses, including reports and information bulletins, compendia and interactive maps, using both hard copy and advanced, user-friendly Internet services. • Maintain databases and information tool kits, to provide information to national and international fora for the purpose of informing decisions for governance. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$4,202</p>
<p style="text-align: center;">3.2.2 Essential Geographic Information and Support LEAD SECTOR: ESS</p>	<ul style="list-style-type: none"> • Implement Canada's 2010-11 treaty obligations for the demarcation of legal boundaries of Aboriginal land claims and the International boundary between Canada and the United States of America. • UNCLOS: Continue analyzing seismic and bathymetric data taken from the Atlantic and identify gaps; undertake a bathymetric survey north of Borden Island and a seismic survey in the Beaufort Sea. • Implement a new geospatial/mapping business model and action plan including: publishing 600 topographic maps of Northern Canada at 1:50 000 scale, implementing the basic architecture for Canada's One-Stop Geospatial Portal, and defining the NRCan/ government role in geospatial and mapping delivery and development.

<p>(CON'T)</p> <p>3.2.2</p> <p>Essential Geographic Information and Support</p> <p>LEAD SECTOR: ESS</p>	<ul style="list-style-type: none"> • Polar Continental Shelf Program (PCSP): Plan and deliver logistical support related to UNCLOS and GEM, as well as regular PCSP client base; plan and deliver \$11M + \$1M upgrades and improvements to Resolute facility; increase level of cooperation with the Department of National Defence (DND) on northern operations, such as providing logistical support to DND's Operation Nanook, to be held in Resolute in summer 2010. • Implement the business model for renewal of Canada's Earth Observation (EO) ground infrastructure, especially in the North, providing Canadians with access to EO data, free whenever possible; a suite of National Master Standing Offers; and the development of an EO Archives, in addition to increasing the focus of a geodetic role toward supporting geosciences. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$79,557</p>
<p>3.2.3</p> <p>Federal Regulatory Process for Major Natural Resource Projects</p> <p>LEAD SECTOR: MPMO</p>	<ul style="list-style-type: none"> • Lead the development and implementation of a whole-of-government strategy to modernize the regulatory review process for natural resource projects. • Effective management of the federal regulatory process for major natural resource projects, as measured by adherence to target timelines and service standards by all federal departments and agencies. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$4,019</p>

PROGRAM ACTIVITY 3.3: GEOMATICS CANADA REVOLVING FUND

The demand by NRCan, other government departments and industrial clients for revolving fund products and services is met through full cost recovery

The [Geomatics Canada Revolving Fund \(GCRF\)](#) was created to allow [Geomatics Canada](#) to shift the costs from taxpayers at large to specific users who benefit directly from the goods and services provided. The GCRF currently has two lines of business:

the sale of aerial photography and paper maps to external clients; and the Satellite Services, which invests in ground stations and computers to leverage investments from international partners and increase business opportunities.

Success of this program activity will be measured by the following indicator:

Percent of rate of service and production costs fully recovered

(Target for is for a favourable trend over the long term).

There are no sub-activities associated with this program.



PROGRAM ACTIVITY 4.1: INTERNAL SERVICES

WHAT THE PROGRAM ACTIVITY IS ABOUT

This PA includes three broad areas, namely, governance and management support, resource management services and asset management services. Activities and services under internal services include communications, legal services, human resources management, financial management, information management, information technology, real property, and material and acquisition services. Also included are management and oversight services, which involve setting the strategic direction of the department, overseeing resource allocation and managing risks.

Key to the effectiveness and efficiency of this program activity is the ability of internal services to adjust and respond to evolving business priorities and requirements. Furthermore, internal services have a responsibility to provide the department with timely, efficient and effective support.

MOVING FORWARD

Fulfilling departmental objectives will require action on two fronts from internal services: 1) identifying and delivering on a selected number of priorities and assessing our performance against them; and 2) devising an implementation strategy that reflects our strengths and builds on the department's renewal exercise to strengthen our capacity.

Part of this will be made possible by the governance structure and by our people – the ones we have, develop and hire. Key to our ability to be responsive is our knowledge of the business, our capacity to develop options and scenarios, and our ability to articulate them in support of effective decision making.

Further refinements to the integrated business planning process and an improved governance structure will help align business priorities with corporate strategies, notably those related to S&T, people and financial management. These include several components, such as improvements to the priority-setting exercise, the creation of a Resource Management Committee to strengthen financial management at the department level, a strengthened [Departmental Audit Committee](#), and an improved capacity to integrate science and policy.

The strengthening of our policy capacity and the implementation of strategic review decisions will ensure a greater alignment of activities with the priorities of Canadians. Furthermore, the renovation of both the [Program Activity Architecture](#) and the Performance Measurement Framework will improve senior management's ability to measure performance and realign activities and funds.

The integrity of our physical assets in support of regulatory and S&T activities will be ensured through the maintenance and modernization of our laboratories across

Canada, as part of the [Economic Action Plan](#). Other key systems will be upgraded and renewed, such as [SAP](#) (financial system) and [PeopleSoft](#) (human resources system), with a view to improve information provided to decision-makers.

The implementation of the [NRCan S&T Strategy](#) will ensure that we are acknowledged as a recognized source of world-class natural resource S&T; a champion for applying S&T to create a sustainable natural resource advantage; a leader in integrating S&T with policy and program decision making; and a partner in understanding and addressing national and international natural resource issues through S&T. Implementation of the strategy will also enable us to be a trusted and effective communicator of our S&T priorities, directions and performance.

HOW WE ARE WORKING TO ACHIEVE THIS

Our people

The vast majority of our workforce in support of this PA is in the administrative and professional categories. In particular, the human resources, communications, procurement, information technology, and finance occupational groups face demographic challenges and important turnover rates created by high demand

throughout government. Common competencies in these groups and those in the administrative group allow for the use of collective staffing activities to address gaps. The Policy Analysts Recruitment and Development Program is often leveraged to recruit policy analysts.

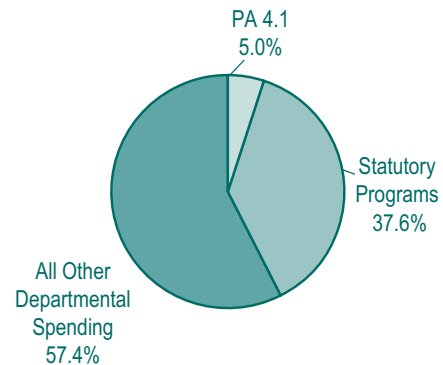
Our physical assets

The majority of our physical assets in support of this program activity comprises office space in the National Capital Region to support our administrative and professional groups.

Our finances

Planned spending for this PA in 2010-11 is \$223M. Spending will be decreasing in the following years (23% in 2011-12 and 26% in 2012-13 from 2010-11 levels), due to the termination of the Modernizing Federal Laboratories Program (EAP initiative).

2010-11 Planned Spending



Programs and initiatives in support of PA 4.1 are structured around three sub-activities. These are listed below, along with key deliverables for 2010-11.

<p>4.1.1 Governance and Management Support LEAD SECTORS: Public Affairs and Portfolio Management Sector, Science and Policy Integration and AUDIT BRANCH</p>	<ul style="list-style-type: none"> • Refine the integrated business planning process and deliver on the integrated planning component of the PS Renewal Initiative. This will involve aligning human, asset, and information resources to deliver the business results of government • Review the Program Activity Architecture, the Performance Measurement Framework, and the Corporate Risk Profile in support of the department's management (planning, monitoring, and reporting) processes • Develop and implement an evaluation strategy in support of the department's policy and management activities • Institute a quarterly financial and non-financial reporting approach • Optimize the value and contribution of the Departmental Audit Committee by strengthening its operations/ functioning • Provide ongoing advice and services on parliamentary affairs, communications and marketing, access to information and privacy, portfolio and consultations management. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$85,772</p>
<p>4.1.2 Resource Management Services LEAD SECTOR: Corporate Management and Services Sector (CMSS)</p>	<ul style="list-style-type: none"> • Further the implementation of the NRCan talent management framework and deliver on the NRCan's HR-related contribution to the PS Renewal initiative. This will entail identifying NRCan's common competencies, developing and implementing strategies/initiatives on recruitment, retention and succession management, taking actions to develop leadership, etc. • Develop and begin implementation on an SAP solution to deliver finance, materiel and project management capabilities through a partnership with Agriculture and Agri-Food Canada • Upgrade the human resources management system – PeopleSoft – as part of the government-wide Corporate Administrative Shared Services initiative to support efficiencies in the areas of human resources, finance and materiel management through sharing the delivery of these services • Strengthen the strategic financial management processes, including a review of the departmental System of Internal Control, to mitigate risks. • Integrate collaborative technologies with other departmental information management and recordkeeping systems as part of departmental integrated knowledge base. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$52,802</p>
<p>4.1.3 Asset Management Services LEAD SECTOR: CMSS</p>	<ul style="list-style-type: none"> • Deliver on the Accelerated Infrastructure Program for deferred maintenance and research facility expansion (including remediation of the Booth Street Complex). • Ongoing activities in the management of the department's building, fleet and information technology assets. <p>PLANNED FINANCIAL RESOURCES (IN THOUSANDS): \$84,398</p>

ANNEX A – PROGRAM ACTIVITY ARCHITECTURE

<p>Strategic Outcome #1 Economic Competitiveness</p> <p>Natural resource sectors are internationally competitive, economically productive, and contribute to the social well-being of Canadians</p>	PA 1.1: Economic Opportunities for Natural Resources	1.1.1 Minerals and Metals Markets, Investment, Innovation and Productivity
		1.1.2 Securing Forest Product Markets
		1.1.3 Advancing Forest Product Innovation
		1.1.4 Aligning Forest S&T Governance
		1.1.5 Supporting Energy and Mineral Exploration
		1.1.6 Energy Policy
		1.1.7 Statutory Programs - Atlantic Offshore
	PA 1.2: Natural Resource-based Communities	1.2.1 Minerals and Metals in Support of Communities
		1.2.2 Forest-based Community Partnerships
<p>Strategic Outcome #2 Environmental Responsibility</p> <p>Canada is a world leader on environmental responsibility in the development and use of natural resources</p>	PA 2.1: Clean Energy	2.1.1 Materials for Production and Transportation of Energy and Energy-Efficient Vehicles
		2.1.2 Clean Energy Policy
		2.1.3 Renewable Energy
		2.1.4 Energy Science and Technology
		2.1.5 Energy Efficiency and Alternative Transportation Fuels
		2.1.6 Energy-based Sustainability in Pulp and Paper
	PA 2.2: Ecosystem Risk Management	2.2.1 Strong Environmental Performance in Minerals and Metals
		2.2.2 Forest Ecosystems Science and Application
		2.2.3 Environmental Geoscience
		2.2.4 Radioactive Waste Management
<p>Strategic Outcome #3 Safety, Security and Stewardship</p> <p>Natural resource knowledge, landmass knowledge and management systems strengthen the safety and security of Canadians and the stewardship of Canada's natural resources and lands</p>	PA 3.1: Adapting to a Changing Climate and Hazard Risk Management	3.1.1 Mining, Infrastructure and Explosives Safety and Security
		3.1.2 Forest Disturbances Science and Application
		3.1.3 Climate Change Geoscience and Adaptation
		3.1.4 Public Safety Geoscience
	PA 3.2: Natural Resource and Landmass Knowledge and Systems	3.2.1 Minerals and Metals Knowledge and Information
		3.2.2 Essential Geographic Information and Support
		3.2.3 Federal Regulatory Process for Major Natural Resource Projects
	PA 3.3: Geomatics Canada Revolving Fund	N/A
	4.1: Internal Services	4.1.1 Governance and Management Support
		4.1.2 Resource Management Services
4.1.3 Asset Management Services		

ANNEX B – FINANCIAL DETAILS

PROGRAM ACTIVITY (Main Estimates)	FORECAST SPENDING 2009-10 (\$M)	PLANNED SPENDING (\$M)		
		2010-11	2011-12	2012-13
STRATEGIC OUTCOME 1: ECONOMIC COMPETITIVENESS				
1.1 Economic opportunities for natural resources ³	304.3	248.1	148.3	119.4
1.2 Natural resource-based communities	14.4	11.8	11.9	11.9
STRATEGIC OUTCOME 2: ENVIRONMENTAL RESPONSIBILITY				
2.1 Clean energy ⁴	831.8	1,918.7	1,113.5	717.2
2.2 Ecosystem risk management ⁵	180.0	205.7	89.3	97.6
STRATEGIC OUTCOME 3: SAFETY, SECURITY AND STEWARDSHIP				
3.1 Adapting to a changing climate and hazard risk management	77.9	68.6	61.9	50.4
3.2 Natural resource and landmass knowledge and systems ⁶	108.1	103.6	85.2	74.4
3.3 Geomatics Canada Revolving Fund ⁷	1.9 -1.9	1.9 -1.9	1.9 -1.9	1.9 -1.9
4.1 Internal Services ⁸	212.2	223.0	171.2	164.0
SUB-TOTAL	1,728.7	2,779.5	1,681.3	1,234.9
STATUTORY PROGRAMS				
1.1 Economic opportunities for natural resources ⁹	2,182.2	1,676.4	1,354.7	1,010.9
TOTAL NRCan¹⁰	3,910.9	4,455.9	3,036.0	2,245.8

³ Reduced spending in 2010-11 compared to 2009-10 is mainly due to the one-time funding for the Soldier Settlement Board fund in 2009-10. Reduced spending in the other years is mainly from the Forestry Market and Diversification programs.

⁴ Funding increases in 2010-11 are for the Pulp and Paper Green Transformation Program, Clean Energy Fund (EAP initiative), Clean Energy Agenda, ecoENERGY Retrofit (EAP initiative), and ecoENERGY for Biofuels programs.

⁵ The reduction from 2010-11 funding levels in 2011-12 and 2012-13 is a result of lower planned spending under the Nuclear Legacy Liabilities program

⁶ Reduced spending under the United Nations Convention of the Law of the Sea (UNCLOS) initiative.

⁷ All activities are performed on a cost-recovery basis.

⁸ Higher spending in 2009-10 and 2010-11 is attributable to the Modernizing Federal Laboratories Program (EAP initiative).

⁹ Statutory programs under the Economic Opportunities for Natural Resources program activity, NRCan, makes various statutory payments to Nova Scotia and Newfoundland and Labrador through its responsibility for offshore energy resources. The Atlantic Offshore Accords provide that the benefits of revenues from the offshore should flow to provinces as if the resources were on land.

¹⁰ Planned spending includes adjustments for Supplementary Estimates Appropriated, Supplementary Estimates Statutory and other adjustments identified by Treasury Board.

ANNEX C - DETAILS OF ECONOMIC ACTION PLAN INITIATIVES

EXPECTED RESULTS	INDICATORS	PLANNED SPENDING 2010-11
EXPANDING MARKET OPPORTUNITIES (Canada Wood, Value to Wood, North American Wood First Programs)		
Increase market opportunities for Canadian wood product producers, through market development, branding, and technology development and transfer activities	Diversified markets for Canadian wood products; use of wood in North American, non-residential construction; new markets for Canadian manufacturers of value-added wood products	PA 1.1 \$21.0M
EXPANDING MARKET OPPORTUNITIES (Support large-scale demonstrations of Canadian-style use of wood in offshore and domestic markets)		
Support related initiatives to increase market opportunities for Canadian wood product producers in offshore (e.g. Canada Wood Program) and domestic (e.g. North American Wood First) markets	Demonstration projects support initiatives to increase non-traditional uses of wood in offshore and domestic markets	PA 1.1 \$5.7M
PROMOTING FOREST INNOVATION AND INVESTMENT (Development of demonstration-scale pilot projects of new products for use in commercial applications)		
Construction of demonstration-scale pilot projects brings research to the next stage toward commercialization	An operating pilot plant to prove the scalability of new technology from laboratory to commercial application	PA 1.1 \$37.0M
CLEAN ENERGY FUND		
Support the development and demonstration of clean energy technologies	Number of demonstrated technologies that meet or surpass current best technologies; number of knowledge products made available to codes and standards developed; number of technology demonstrations leading to commercialisation (long-term outcome)	PA 2.1 \$174.9M
ecoENERGY RETROFIT – HOMES PROGRAM		
To encourage homeowners to improve the energy efficiency of their homes and reduce their greenhouse gas (GHG) emissions	Grant applications received; grant amounts paid; number of grants paid; GHG emission reductions; pre-retrofit assessments	PA 2.1 \$389.9M

EXPECTED RESULTS	INDICATORS	PLANNED SPENDING 2010-11
PROMOTING FOREST INNOVATION AND INVESTMENT (Contributions to FPIInnovations for its Transformative Technologies Program)		
To develop emerging and breakthrough technologies related to forest biomass utilization, nanotechnology and next generation forest products	New products and processes adopted by industry; new demonstration/pilot projects and trials; in-kind contributions leveraged from stakeholders; research institute consolidation	PA 1.1 \$43.8M
MODERNIZING FEDERAL LABORATORIES		
Maintenance and modernization of NRCan laboratories across Canada	Percentage of program funding contracted/awarded or put out to tender for bids; percentage of funding not yet contracted/awarded or put out to tender	PA 4.1 \$24.8M PA 3.1 \$5.9M
ACCELERATING FEDERAL CONTAMINATED SITES		
Conducting site assessments, remediation and risk management activities on federal contaminated sites	Number of assessment projects planned, underway or completed; number of remediation/risk management projects planned, underway or completed	PA 4.1 \$8.6M



ANNEX D - FEEDBACK FORM

Did the Integrated Business Plan highlight the NRCan priorities and strategic directions?

Did you see your work in the IBP and how your work contributes to achieving NRCan's mandate and priorities?

Do you have any suggestions as to how we can improve the Integrated Business Plan?

Do you have any suggestions for "did you know" boxes?

Other Comments

Please send completed forms and any other comments to IBP-PAI@nrcan-rncan.gc.ca



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