

Natural Resources Canada

2007-08 Estimates

A Report on Plans and Priorities

Gary Lunn
Minister of Natural Resources

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Section I – Overview

Minister's Message

I am pleased to present the 2007-08 Report on Plans and Priorities for Natural Resources Canada (NRCan).

Natural resources are vital to Canada's economy, contributing almost 13 percent of our gross domestic product and a record \$93.4 billion to our trade surplus. Looking ahead, the resource sectors will offer unprecedented opportunities for jobs and growth in communities across Canada.

To ensure that Canadians fully realize the benefits from our resource strengths, NRCan will work diligently to build competitive advantage for the nation's resource sectors. We will do so by leveraging the ingenuity and skill of its workforce, its scientific and technological excellence, and its world-class governance structures. We will ensure that Canadians continue to derive the greatest economic benefit from development of their natural resources, while still achieving demanding social and environmental goals.

The production and use of energy is just one area in which the government is taking decisive action. Our Government's ambitious *Clean Air Act* will regulate air pollution and greenhouse gas emissions from key sectors for the first time in history. NRCan will work with Environment Canada and stakeholders to implement this commitment in a fair, effective and timely manner.

Over the coming year, NRCan will also move forward in implementing the ecoENERGY initiatives announced in January 2007. Investments in science and technology will make it possible to use clean energy technologies in energy production and use, and reduce greenhouse gas emissions. Energy efficiency programs and regulations will give Canadians practical opportunities to improve the environment in their daily activities. Finally, investments in renewable energy will offer cleaner and more diversified energy choices to Canadians.

Regulatory efficiency is one of my major priorities. The current system is struggling to meet demands at a time of almost unparalleled opportunity in the mining and energy sectors. We will work toward streamlining the regulatory process to enhance economic growth and address environmental and social issues.

Looking at Canada's forest industry, we will pursue the transformation of this sector with stakeholders through innovation, technology and creativity. With Budget 2006 funding, NRCan will play a leading role in this pursuit, providing policy, programming and partnering support. We are also at the forefront of helping the forest sector and affected communities deal with the



Gary Lunn
Minister of Natural Resources

unprecedented Mountain Pine Beetle infestation, which continues to threaten the ecological and economic viability of boreal forests.

Finally, in order to strengthen the competitiveness of the mining industry, NRCan will lead efforts to promote innovation, improve the investment climate and combat restrictions to market access, while ensuring the commitment to corporate social responsibility at home and abroad.

Canadians have expressed their desire for the responsible development and use of their natural resources. NRCan is responding with clear and demonstrable results. As we move forward, we will continue to ensure that the economic, environmental and social needs of Canadians are paramount in the work of NRCan and your Government.

We will focus on Canada becoming a new kind of global economic leader — one known for making environmental and social responsibility part of its approach to growth.

NRCan will better position Canada to achieve sustainable growth in a global marketplace, and I look forward to leading the way.

Gary Lunn

Management Representation Statement

I submit, for tabling in Parliament, the 2007-08 Report on Plans and Priorities (RPP) for Natural Resources Canada.

This document has been prepared based on the reporting principles contained in the *Guide to the Preparation of Part III of the 2007-08 Estimates: Report on Plans and Priorities and Departmental Performance Report*.

- It adheres to the specific reporting requirements outlined in the Treasury Board Secretariat (TBS) guidance.
- It is based on the Department's strategic outcome and Program Activity Architecture that were approved by the Treasury Board.
- It presents consistent, comprehensive, balanced and reliable information.
- It provides a basis of accountability for the results achieved with the resources and authorities entrusted to it.
- It reports finances based on approved planned spending numbers from the TBS.

Cassie J. Doyle
Deputy Minister

Summary Information

NRCan's mandate is to develop, implement and deliver policies, programs, science and technology (S&T) for the sustainable development and responsible use of Canada's mineral, energy and forestry resources. The Department is also responsible for developing an understanding of Canada's landmass and collecting and disseminating information on resource development. NRCan also maintains key roles related to the safety and security of people and natural resources, including security of natural resource infrastructure and supply.

NRCan's Minister is responsible for, or has responsibilities under, more than 30 Acts of Parliament. The core powers, duties and functions are set forth in the *Department of Natural Resources Act*, the *Resources and Technical Surveys Act*, and the *Forestry Act*. The remaining Acts set out the terms for the management of Crown lands and of Canada's natural resource policies, including energy and nuclear policy.

Our work is concentrated in areas of core federal jurisdiction, which includes:

- ▶ international and inter-provincial trade;
- ▶ natural resource-based science and technology in support of federal objectives related to economic development, environmental protection, supply security and resource-related health and safety;
- ▶ natural resource management on Crown lands, the North and offshore areas; and
- ▶ uranium and nuclear power.

In carrying out these responsibilities, NRCan works closely with other federal departments with resource-related responsibilities, and supports the federal role in regional development and Aboriginal affairs in matters related to the resource sectors. NRCan also works in areas of shared responsibility with the provinces.

Financial and Human Resources

2007-08	2008-09	2009-10
\$2,153.5 M / 4,289 FTEs	\$1,887.5 M / 4,127 FTEs	\$1,784.4 M / 4,117 FTEs

Operating Environment

Canada's vast resources have shaped our history, generating wealth and a distinctive way of life for generations of Canadians. Natural resources are a cornerstone of our success as a modern industrial society from before Confederation to the beginning of the 21st century. We have used our resource assets to our advantage, turning Canada into a world leading commodity producer with related strengths in financial services, engineering, environmental consultancy, manufacturing and specialized technologies and services.

Yet, as Canada moves towards a future characterized by a rapidly changing global economy and growing environmental uncertainty, we need to ask ourselves a key question – does Canada have the right approach to ensuring sustainable resource growth now and in the future? More than ever before, we need to recognize that, in the 21st century, vast natural resource endowments are not a sufficient condition of economic success, a better quality of life or a healthy environment. For example, other countries that exceed Canada's natural resource endowment are not realizing the same economic and environmental successes that we enjoy. Possessing more of the world's natural resources is not what matters most. It is how you use and build upon these endowments that counts.

To build a more sustainable resource future, we must increasingly focus our efforts in the areas where we can build competitive advantage in today's global knowledge economy and society. This means focusing on strengths and centering our efforts around the three attributes of globally dynamic economies:

1. the ingenuity and skills of people;
2. scientific discoveries, technological advancements and a culture of innovation; and
3. world-leading governance structures.

In short, Canada needs a natural resources strategy for the 21st century. A strategy that will help build robust competitive advantage while embracing environmental and social sustainability. A story that better positions us to navigate the forces of globalization and environmental uncertainty, recognizing that natural resources are an integral part of our economy and way of life, now and in the future.

Impact of Emerging Economies and Global Demand – The rise of China and India as engines of growth in the global economy is increasing demand for Canada's natural resources. As these economies develop, their needs for energy, vital minerals and metals, and forest products will only grow (e.g., in base metals, copper, aluminum, nickel and zinc, China accounts for 20 percent of global demand). This strong Asian demand, coupled with the U.S. insatiable appetite, continues to support historically high commodity prices. As a net exporter of resources, this implies a wealth gain for Canada. But, at the same time we are facing increasing competition from resource-rich emerging markets such as Russia, Brazil and China. This places a strong emphasis on the need for Canadians to continuously innovate, expand into new markets and move up the global value chain in order to remain competitive.

There is a strong economic upside for Canada, but there are also risks. Commodity booms are cyclical, with some lasting longer than others depending on the extent of demand, pace of new project investments and the health of the global economy. The risk factors to growth – U.S. economic slowdown, the potential overheating of the Chinese economy – should not be underestimated. As well, while Canada is in the enviable position of facing hundreds of billions of dollars in potential new resource investments, this is creating real economic strains – from skilled labor shortages, pressing needs for new infrastructure, to regulatory bottlenecks and insufficient capacity to deal with a range of issues including the engagement of Aboriginal peoples.

Natural Resources and the Environment – The linkages between natural resources, the environment and sustainability are critical. As rising demand puts increasing pressure on our natural resources, including water, this, in turn, places the spotlight on important environmental issues both within Canada and internationally – from rising greenhouse gas emissions (GHGs), air pollution, damage to the boreal forest (e.g., pests, forest fires), rising water usage and quality issues, to the changing North. In this context, sound management of our natural resource endowments, which is shared with the provinces and territories, is extremely important for the quality of life and well being of all Canadians.

Both Canada and the global community need to find effective ways of reconciling the increasing demand for vital resources, especially fossil fuels, with the adverse environmental impacts this increased usage generates. Among other things, this means placing a high priority on using regulation wisely to reduce the environmental footprint of industrial production and our modern way of life. It means setting long-term goals for GHG reductions, reducing air pollution and creating new energy efficiency standards. It also means investing strategically in a clean energy agenda focused on promoting smarter energy use, increasing the supply of clean energy and addressing the emissions from conventional sources of energy.

Increasing Knowledge Intensity and Access to Skilled People – In order to stay at the forefront of today's global economy, businesses must act smarter, build alliances and participate in global knowledge-supply chains, generate new ideas and products, and use highly knowledge-intensive processes and technologies. Canada's natural resources sectors are no exception. Some Canadian resource companies are recognized leaders for their use of new technologies, engineering expertise, and sustainable resource practices. Yet, at the macro level, the research and development (R&D) intensity of our resource sectors has declined significantly since the early 1990s. Whereas their R&D/gross domestic product ratio once outperformed Canada's business sector average, it is now less than half.

As the knowledge intensity of economic activity increases, so does the skill requirements. The need for more skilled people, when coupled with an aging population, foretells challenges ahead. There are serious implications for Canada's natural resources industries, some of which, such as oil sands and mining, are already experiencing significant labor shortages.

Corporate Environment – To ensure that NRCan is prepared and properly positioned to deliver on the priorities of Canadians and their Government, the Department has undertaken an exercise in renewal. Through this process, NRCan will develop an integrated natural resource policy framework to guide its work going forward. As a result, NRCan's Program Activity Architecture will be revised in the 2008-09 fiscal year to better link the work of the Department with the requirements of Canadians and their government, as well as reflect the new realities of today's global knowledge economy. It is our intention to shift from an approach that examines natural resources by sector to an integrated model where the economic, environmental, and social needs of Canadians are paramount. This new model will be focused on the dynamics of sustainable growth for current and future generations. It will be focused on helping to turn Canada into a new kind of global leader, one known for its environmentally and socially sustainable approaches to

growth. By organizing and reporting on the work of the Department in a new manner, NRCan will be better able to prioritize and integrate its policies, programs, and science, as well as ensure that it remains relevant and responsive to Canadians.

Departmental Priorities

Priority Title	Type*
Clean Air for all Canadians	previous commitment
Smarter, Faster and More Effective Regulation	ongoing
Enhancing Canada’s Forest Sector Competitiveness	previous commitment
Mitigating the Impact of the Mountain Pine Beetle Infestation	previous commitment
Strengthening Canada’s Mining Industry	ongoing

* An ongoing priority has no end date; a previously committed priority has an estimated end date and was committed to in prior budgets or main estimates documents.

Clean Air for All Canadians – By introducing *Canada’s Clean Air Act*, the Government has committed to better protecting Canadians from the negative effects of air pollution and GHGs. For the first time, a federal regulatory framework will be put in place to bring about real reductions in air pollutants and GHG emissions. NRCan is working with Environment Canada to implement this commitment in a fair, effective, and timely manner, consulting with stakeholders and the natural resource industries affected by these new regulations. Through the *Clean Air Act*, NRCan is responsible for proposed changes to the *Energy Efficiency Act* to strengthen and broaden the government’s ability to improve the energy performance of equipment and appliances.

The Department is also pursuing initiatives that promote clean energy. Our objectives are to reduce the harmful effects of energy production and consumption that accounts for 85 percent of smog-causing nitrogen oxide emissions and 80 percent of Canada’s annual GHG emissions, while generating innovative technologies that Canada can market abroad. NRCan will help Canada realize this cleaner, healthier, and more prosperous future by providing leadership, expertise, and support in three critical areas:

- **Renewable Energy** – Providing economic incentives for wind, solar, and other emerging renewable energy sources, which currently face a cost disadvantage as compared to fossil fuel energy. These technologies will be important components of a cleaner, more diversified energy supply mix.
- **Energy Efficiency** – Encouraging Canadians to focus on energy efficiency and conservation. Regulatory measures, such as mandated fuel economy for light duty vehicles and lower power consumption standards for household appliances, will eliminate from the marketplace the most inefficient products. Complementary energy efficiency programs will lead consumers and businesses to even higher efficiency levels through a range of informational tools, training and focused incentives.

- Science and Technology – Investing in new technologies for clean energy and cleaner conventional energy. The attainment of significant cuts in GHG emissions will require sustained R&D investment to develop new technologies that sever the link between energy production and use and emissions. A new energy S&T initiative will lever R&D spending by industry and the provinces in strategically important areas.

Smarter, Faster and More Effective Regulation – Canada is currently experiencing unprecedented growth in natural resource projects, with as much as \$300 billion in major developments possible over the next decade. An efficient and effective federal regulatory system is key to its responsible and sustainable development, however, the existing system is struggling to meet existing demands. This undermines the competitiveness of the Canadian economy, as well as potentially compromising our ability to effectively address environmental and social issues. NRCan’s Deputy Minister is leading a collaborative interdepartmental task force of major regulatory and environmental assessment departments and agencies to improve the effectiveness and performance of the regulatory system for major resource projects. The task force is advancing comprehensive solutions which will enhance efficiency, accountability and predictability of the system, while strengthening the government’s ability to address critical social and environmental issues. Research efforts like a regulatory mapping initiative and expansion of NRCan’s BizPaL+ pilot project, which is being undertaken in collaboration with Industry Canada, also offer potential for improving the federal regulatory system. In areas where NRCan plays a lead regulatory role, we will continue to work with our partners to renew and modernize regulatory frameworks in order to better protect the health and safety of Canadians, safeguard our natural environment, and support industry growth and investment consistent with sustainable development.



Enhancing Canada’s Forest Sector Competitiveness – Canada’s forest sector is undergoing a major transition, looking to ensure its success in today’s global economy. With international competitors leveraging their access to cheaper wood, faster growing trees, lower-cost labor and lighter regulatory burdens, Canada’s abundant forest resources are no longer sufficient for securing the long-term viability of the sector. To succeed, Canada is pursuing greater value from its forest assets through innovation, technology, and creativity. Budget 2006 is assisting this transition, providing funding to strengthen the long-term competitiveness of the forestry sector. NRCan will have a leading role, providing policy, programming, and partnering support for the sector in the areas of science and technology, R&D, market access, and environment standards.

Mitigating the Impact of the Mountain Pine Beetle Infestation – The devastation inflicted on much of Canada’s west coast by the Mountain Pine Beetle is virtually unprecedented. Current and future economic losses to the forest sector are in the billions of dollars, while the possible spread of the infestation threatens the ecological and economic viability of the boreal forests

across Canada. The Government of Canada has therefore taken immediate action. Budget 2006 committed significant funding to combat the pine beetle infestation, with NRCan playing a key role in the implementation of these commitments. Moving forward, NRCan, in collaboration with the provinces and territories, is also leading the development of a national forest pest strategy. The strategy will examine the issue of forest pests across Canada to better assess risks and address impacts on forest ecology, industry, and dependant communities.

Strengthening Canada's Mining Industry – Junior and intermediate mining companies, which are small and medium enterprises (SMEs), account for the vast majority of Canadian projects at home and abroad, and for two-thirds of total exploration spending in Canada. These SMEs represent an excellent economic and social opportunity for Canada, especially in rural, northern and Aboriginal communities. However, they face numerous challenges, such as declining domestic reserves, the regulatory burden, intense global competition for investment, human resources shortfalls, and local opposition to mining projects. To overcome these challenges and to capitalize on current strong commodity prices, NRCan will lead efforts in promoting innovation, improving the domestic investment climate (including a single-window approach to the regulatory process), minimizing or eliminating unnecessary restrictions on market access, and encouraging corporate social responsibility both at home and abroad.

Program Activities by Strategic Outcome

Program Activity*	Expected Results	Planned Spending (M\$)			Contributes to the following priority
		2007-08	2008-09	2009-10	
Strategic Outcome – Canadians derive sustainable social and economic benefits from the assessment, development and use of energy, forest and mineral resources, and have the knowledge to mitigate environmental impacts and respond effectively to natural and man-made hazards					
Earth Sciences	Earth sciences knowledge and tools enable Canadians to achieve economic opportunities, a clean environment, and adapt to a changing climate, in safety and security	233.8	226.3	204.6	<ul style="list-style-type: none"> • Clean air for all Canadians
Energy**	Canadians benefit economically, environmentally, and socially from the sustainable production, development and use of Canada's abundant energy resources	1,593.9	1,337.9	1,390.3	<ul style="list-style-type: none"> • Clean air for all Canadians • Smarter, faster and more effective regulation
Sustainable Forest	Healthy forests continue to provide balanced social, environmental and economic benefits to Canadians	268.3	264.8	121.9	<ul style="list-style-type: none"> • Enhancing Canada's forest sector competitiveness • Mitigating the impact of the Mountain Pine Beetle infestation
Minerals and Metals	Canadians derive sustainable, social and economic net benefits from the assessment, development and use of mineral expertise, mineral resources and related industries	57.5	58.5	67.6	<ul style="list-style-type: none"> • Smarter, faster and more effective regulation • Strengthening Canada's mining industry
Total NRCan***		2,153.5	1,887.5	1,784.4	

* NRCan's program activities contributes to the achievement of the following Government of Canada strategic outcomes: strong economic growth; an innovative and knowledge-based economy; a clean and healthy environment; a fair and secure marketplace; a strong and mutually beneficial North American partnership; and a prosperous Canada through global commerce.

** Planned spending includes statutory programs - Atlantic offshore: \$1,050.6M for 2007-08; \$991.7M for 2008-09 and \$1,070.9M for 2009-10.

*** Planned spending for the corporate management program activity has been distributed across all program activities.

Section II – Analysis of Program Activities by Strategic Outcome

1. Introduction

This section provides information about NRCan’s results structure (Strategic Outcome and Program Activity Architecture).

Strategic Outcome

Canadians derive sustainable social and economic benefits from the assessment, development and use of energy, forest and mineral resources, and have the knowledge to mitigate environmental impacts and respond effectively to natural and man-made hazards

NRCan manages its program delivery through four major program activities: Earth Sciences, Energy, Forest, and Minerals and Metals. Each of NRCan’s program activities is divided into smaller groups of activities that are designed to achieve intermediate outcomes that collectively contribute to the realization of the overall departmental strategic outcome.

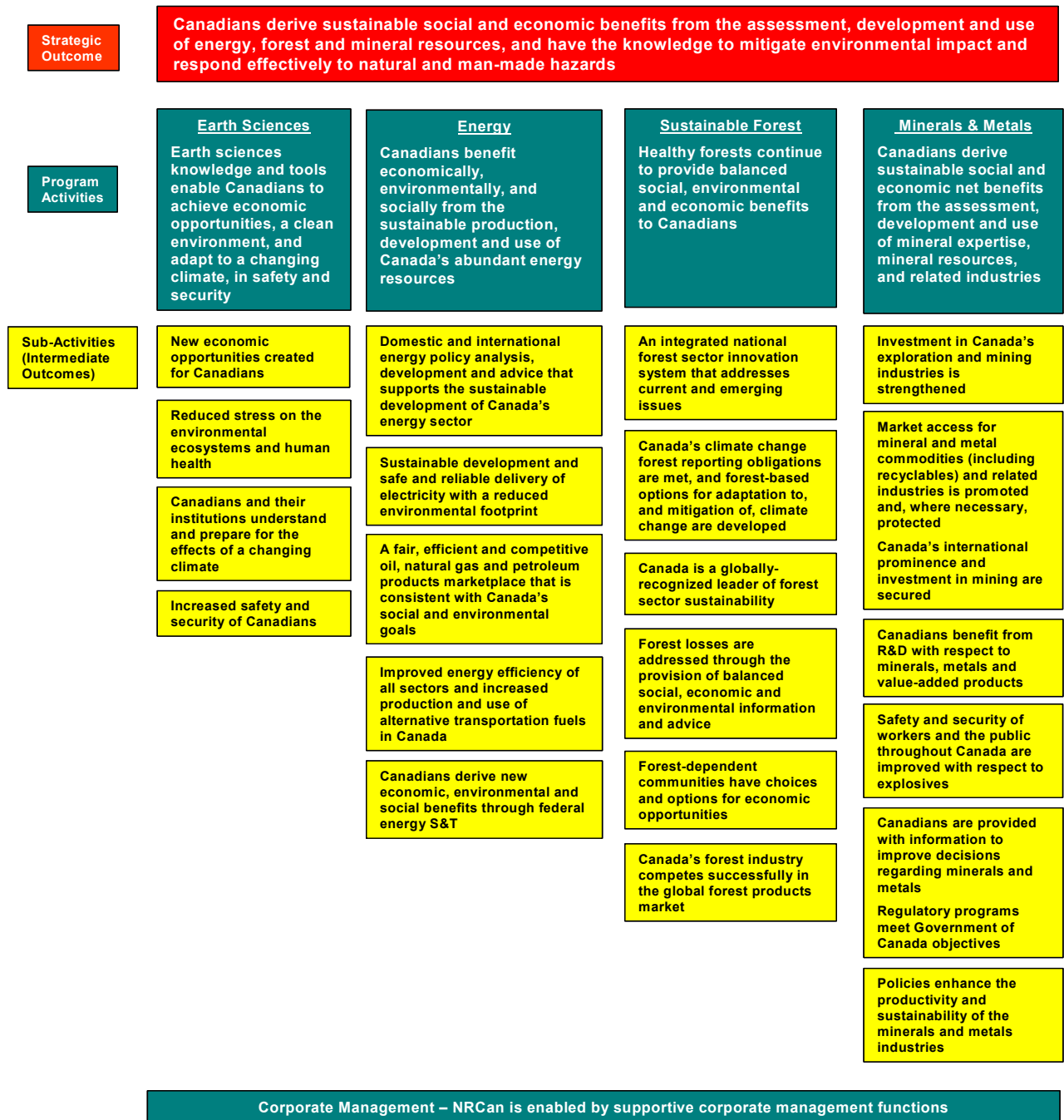
For each intermediate outcome, the department has identified a core suite of key performance indicators that will help the Department monitor results and to guide decision-making along the way.

The Corporate Management program activity provides internal support and enables the delivery of other departmental programs.

Also included in this section of the report are examples of the strategies and initiatives that the Department is undertaking to successfully achieve its intermediate outcomes and to impact in a positive direction, its anticipated results. Planned spending information clearly identifies the resources required to deliver each group of activities that contribute to each intermediate outcome.

By focussing on this results structure, NRCan is improving its ability to manage by results. It is also ensuring that its individual programs, projects and initiatives are relevant to government and departmental priorities, and continue to provide value for money to Canadians.

2. Departmental Results Structure



3. Intermediate Outcomes and Key Performance Indicators by Program Activity

The table below presents the performance measurement framework, or core suite of performance indicators, by program activity, which will form the basis for reporting on performance in the Departmental Performance Report for the period ending March 31, 2008.

Intermediate Outcomes	Key Performance Indicators
PROGRAM ACTIVITY - EARTH SCIENCES - Earth sciences knowledge and tools enable Canadians to achieve economic opportunities, a clean environment, and adapt to a changing climate, in safety and security	
New economic opportunities created for Canadians	<ul style="list-style-type: none"> • increased mineral and energy exploration investment made by the private sector as a result of public geoscience investments • meet the legal requirements to provide a survey system on Canada Lands to enable economic development
Reduced stress on the environmental ecosystems and human health	<ul style="list-style-type: none"> • the use of NRCan assessments of environmental hazards that result in corrective actions • percentage of key Canadian aquifers with complete assessments
Canadians and their institutions understand and prepare for the effects of a changing climate	<ul style="list-style-type: none"> • the availability of NRCan information to Canadians in developing strategies to adapt to climate change
Increased safety and security of Canadians	<ul style="list-style-type: none"> • NRCan meets its emergency response obligations in the event of real or simulated civil emergencies • increased use of NRCan hazard assessments in planning and hazard mitigation decisions • meet international treaty obligations to maintain a well defined Canada/U.S. boundary for border security purposes
PROGRAM ACTIVITY - ENERGY – Canadians benefit economically, environmentally, and socially from the sustainable production, development and use of Canada’s abundant energy resources	
Domestic and international energy policy analysis, development and advice that supports sustainable development of Canada’s energy sector	<ul style="list-style-type: none"> • Canada’s energy contribution to GDP • Canada’s energy exports • Canada’s emissions intensity
Sustainable development and safe and reliable delivery of electricity with a reduced environmental footprint	<ul style="list-style-type: none"> • number of petajoules (PJ) of zero or low emission electrical and thermal energy in Canada • index of electricity reliability • emissions intensity of electricity generation in Canada • public confidence in nuclear fuel cycle activities

Intermediate Outcomes	Key Performance Indicators
A fair, efficient and competitive oil, natural gas and petroleum products marketplace that is consistent with Canada's social and environmental goals	<ul style="list-style-type: none"> • increased investment in Canada's oil and natural gas industry • increased contributions to GDP from Canada's oil and natural gas industry • increased public awareness and understanding of petroleum markets
Improved energy efficiency of all sectors and increased production and use of alternative transportation fuels in Canada	<ul style="list-style-type: none"> • percent improvements in energy efficiency • the number of petajoules energy savings due to energy efficiency • renewable fuel production as a percentage of total transportation fuel • alternative fuel use as a percentage of total transportation fuel
Canadians derive new economic, environmental and social benefits through federal energy S&T	<ul style="list-style-type: none"> • technology scale-up (i.e. relative number of our projects moving from one category to the next – bench-scale research, pilot-scale research, demonstration, commercialization) • technology focussing (i.e. project distribution along the innovation curve) • number of codes published, presentations, active Memorandum of Understanding (MOUs), patents, licences issued • number of energy S&T partnerships both domestic and international
PROGRAM ACTIVITY - SUSTAINABLE FOREST – Healthy forests continue to provide balanced social, environmental and economic benefits to Canadians	
An integrated national forest sector innovation system that addresses current and emerging issues	<ul style="list-style-type: none"> • a national forest research institute, which includes the new NRCan-created Canadian Wood Fibre Centre, is established, and defines innovation priorities and goals to improve the competitiveness of the forest sector in Canada • the Canadian Wood Fibre Centre is fully operational and has integrated its priorities with the national forest research institute • academia is actively engaged in the development and launch of a national forest innovation work program
Canada's climate change forest reporting obligations are met and forest-based options for adaptation to, and mitigation of, climate change are developed	<ul style="list-style-type: none"> • information and options for inclusion of forests in adaptation strategies, including options for managing Canada's forest • forest-related information is reported in Canada's National Inventory Report of Greenhouse Gas Sources and Sinks to the U.N. Framework Convention on Climate Change by April of each year
Canada is a globally-recognized leader of forest sector sustainability	<ul style="list-style-type: none"> • number of forest countries actively committed to the Canada-led initiative to secure an international agreement on sustainable forest management • assessment of the new approach to the State of Canada's Forests report to Parliament • value of leveraged contributions in key bilateral science and technology relationships, including the U.S., Russia, and China.

Intermediate Outcomes	Key Performance Indicators
<p>Forest losses are addressed through the provision of balanced social, economic and environmental information and advice</p>	<ul style="list-style-type: none"> • full implementation of the controlling the spread element of the federal response to the Mountain Pine Beetle Infestation, including mitigating the eastern spread of the beetle by applying control strategies to 375,000 hectares of beetle-affected forested areas • number of Canadian jurisdictions and value of their contributions coordinating their operational management of forest pest risks under a national forest pest strategy • number of Canadian jurisdictions and value of their contributions coordinating their operational management of wildland fire risks under the Canadian Wildland Fire Strategy
<p>Forest-dependent communities have choices and options for economic opportunities</p>	<ul style="list-style-type: none"> • full implementation of the protecting forests and communities element of the federal response to the Mountain Pine Beetle Infestation, including developing options for new natural resource-based opportunities for affected communities • number of partnerships and their contributions under the Forest Communities Program • establishment of baseline data on the resilience of Aboriginal and non-Aboriginal forest-based communities
<p>Canada's forest industry competes successfully in the global forest products market</p>	<ul style="list-style-type: none"> • reduction of technical barriers to wood use in offshore, and North American markets • improved competitiveness and productivity of the Canadian secondary-manufacturing wood sector • expansion of wood markets in targeted offshore, and North American markets
<p>PROGRAM ACTIVITY - MINERALS AND METALS – Canadians derive sustainable social and economic net benefits from the assessment, development and use of mineral expertise, mineral resources, and related industries</p>	
<p>Investment in Canada's exploration and mining industries is strengthened</p>	<ul style="list-style-type: none"> • Canada accounts for more than 35 percent of the equity raised for mineral exploration and mining in the world • Canada accounts for more than 15 percent of global expenditures on mineral exploration • the rate of decline in base-metal reserves is moderated
<p>Market access for mineral and metal commodities (including recyclables) and related industries is promoted and, where necessary, protected</p> <p>Canada's international prominence and investment in mining are secured</p>	<ul style="list-style-type: none"> • unnecessary restrictions on market access and investment are minimized or eliminated • Canada influences intergovernmental organizations to develop a coordinated program to address the United Nations Commission on Sustainable Development's 2010 agenda for mining sustainability
<p>Canadians benefit (i.e., higher quality of life) from R&D with respect to minerals, metals and value-added products</p>	<ul style="list-style-type: none"> • labor and total factor productivity growth in Canada's minerals and metals industries are greater than the national average for all industries • the emission of greenhouse gases and pollutants by the minerals and metals and associated industries (e.g., transportation) are reduced • the health and safety of workers in the mining industry are improved

Intermediate Outcomes	Key Performance Indicators
The safety and security of workers and the public throughout Canada are improved with respect to explosives	<ul style="list-style-type: none"> • the number of explosives-related accidents is below or at least comparable to the average of the previous three years • the quantity of explosives stolen is below or at least comparable to the average of the previous three years
<p>Canadians are provided with information to improve decisions regarding minerals and metals</p> <p>Regulatory programs meet the Government of Canada's objectives</p>	<ul style="list-style-type: none"> • Canadians receive relevant, accurate, timely, and accessible statistics, as defined in Statistics Canada's Quality Assurance Framework, on the minerals and metals industries • the environmental assessments of mining projects under the <i>Canadian Environmental Assessment Act</i> are completed within agreed-upon time lines • the regulatory process (e.g., the environmental assessment process, and regulatory permitting, licensing and authorization) are streamlined through a single-window approach • the quantity of rough diamonds imported from and exported to non-participants in the Kimberley Process is nil
Policies enhance the productivity and sustainability of the minerals and metals industries	<ul style="list-style-type: none"> • federal policies are developed in partnership with and supported by provincial and territorial mines ministers • Aboriginals account for five percent of the labor force in Canada's mining industry • Aboriginal awareness of the benefits and impacts of mining is enhanced
PROGRAM ACTIVITY - CORPORATE MANAGEMENT – NRCan is enabled by supportive corporate management functions	
NRCan is supported by efficient and effective corporate management functions	<ul style="list-style-type: none"> • actual departmental expenditures within -5 percent of planned spending (votes 1, 5 and 10) • evidence of significant human resources renewal initiatives implemented • degree to which the Department and the Treasury Board Secretariat have invested in NRCan's Long Term Capital Plan • degree to which NRCan invests in recapitalization of real property versus 4 percent standard benchmark • evidence of an enterprise approach to information management and information technology planning and investing
NRCan is enabled to deliver value to Canadians supported by efficient and effective shared administrative services	<ul style="list-style-type: none"> • overall rate of satisfaction for shared services provided to NRCan • total savings from shared services
The provision of relevant and timely policy analysis and advice for decision-making on government priorities and departmental responsibilities	<ul style="list-style-type: none"> • satisfaction by the Minister and Deputy Minister of the quality and timeliness of policy advice
NRCan is provided with timely and effective communications advice and support	<ul style="list-style-type: none"> • overall satisfaction of internal (departmental) clients

Intermediate Outcomes	Key Performance Indicators
Departmental management systems, programs, policies and initiatives are strengthened as a result of independent performance assessments	<ul style="list-style-type: none"> • the internal audit function meets the requirement of the Government of Canada Internal Audit Policy and is rated as satisfactory by the Comptroller General of Canada • the evaluation function meets the requirement of the Evaluation Policy and is rated as satisfactory by the Treasury Board Secretariat
NRCan is provided with comprehensive S&T analysis, policy, strategies and knowledge services	<ul style="list-style-type: none"> • extent of NRCan's S&T influence (e.g. qualitative and quantitative evidence in policies, programs, practices and knowledge services)

4. Analysis by Program Activity

This section provides clear and concise information, by program activity, on plans, strategies, expected results and resources over a three-year planning period.

EARTH SCIENCES PROGRAM ACTIVITY – Earth sciences knowledge and tools enable Canadians to achieve economic opportunities, a clean environment, and adapt to a changing climate, in safety and security

Intermediate Outcomes	Planned Spending (\$M)		
	2007-08	2008-09	2009-10
New economic opportunities created for Canadians			
• energy and mineral resource development	46.8	47.8	32.5
• northern resources and development	20.1	20.1	20.1
• supporting property rights on Canada Aboriginal and Heritage Lands	15.8	15.6	15.6
• foundations for Canadian geographic information	41.6	45.1	41.7
• international capacity-building and trade and investment	1.3	1.3	1.3
Reduced stress on the environmental ecosystems and human health			
• monitoring and assessment	10.7	10.7	10.7
Canadians and their institutions understand and prepare for the effects of a changing climate			
• adapting to a changing climate	16.1	5.3	5.3
Increased safety and security of Canadians			
• public safety and security	14.8	14.8	14.8
Management and support			
• strategic/operational support	37.9	37.2	34.1
Corporate management	28.7	28.4	28.5
Total – Program Activity	233.8	226.3	204.6
FTEs	1,582	1,563	1,553

Planning Context

NRCan's earth sciences activities provide a foundation for Canada's earth sciences innovation system, and are vital to our natural resource industries, and a key component of the prosperity of Canadians. NRCan plays a pivotal role in the collection and dissemination of public-good and public-knowledge earth sciences information of major importance to Canada's energy, mining and forestry sectors, among others. Canada's geomatic and geoscience industries are

experiencing significant growth in response to a continuing increase in domestic and international demand for their products and services. For example, in 2004, total revenue from the sale of geomatics products and services grew at a rate of 16 percent, reaching \$2.8 billion, with a direct contribution of \$2 billion to Canada's gross domestic product (GDP).

The Department works closely with its numerous partners and stakeholders in industry and academia to ensure the acquisition, analysis and dissemination of accurate, accessible earth sciences information about Canada. Departmental earth sciences activities improve the probability of finding new energy resources and reduce related investment risk, and inform on



Scientists from the Geological Survey of Canada cutting ice samples from Mount Logan

environmental protection and energy policy development. In addition, NRCan earth sciences programs consistently lead to the identification of new mineral resource potential, and foster responsible natural resource development.

NRCan's earth sciences activities are essential in supporting Canada's offshore territorial claims, through the United Nations Convention on the Law of the Sea (UNCLOS) and dealing with climate change, groundwater issues, natural hazards and Nuclear Test Ban Treaty monitoring. These activities also foster the development of the natural

resources that are key to the social and economic development of the North. Activities such as the Department's national GeoConnections initiative promote capacity building in local communities through the provision of geoscience knowledge required for effective infrastructure and land-use planning. Programs contribute to the development of decision-making capacity in rural, remote and Aboriginal communities, as well as in urban centres.

A significant challenge, shared with other levels of government and the private sector, is that of attracting and retaining highly skilled S&T staff. New departmental initiatives in this regard are being undertaken, including the development of a human resources strategy.

New economic opportunities created for Canadians

In partnership with the provincial and territorial governments and other federal departments, NRCan will deliver an improved, expanded public earth sciences knowledge base specially designed to reduce investment risk and stimulate new private-sector investment and mineral and energy discovery, and development to create additional economic opportunities for Canadians.

Canada's economy will continue to benefit from strong offshore resource development within a modern sustainable ocean framework and measured by an annual growth for the marine sector.

Canada ratified the UNCLOS in November 2003, and now has until 2013 to submit evidence to claim an extended continental shelf outside the existing 200 nautical miles (nm) Exclusive Economic Zone (EEZ). If the claim is judged valid, Canada will achieve greater certainty with

regards to its sovereignty over the Arctic and Atlantic continental shelves, and any mineral and hydrocarbon resources in those areas, beyond the customary 200 nm EEZ.

NRCan will contribute to the further development of northern peoples and communities, and thus, to the well-being of all Canadians, through the provision of high quality earth sciences knowledge that northerners deem essential to responsible decision-making for resource development and land management challenges. The Department anticipates that an improvement in local opportunities will lead to a stronger, more sustainable northern economy that provides local and regional employment, sustained capacity and skills, and long-term self-sufficiency that creates prosperity for northerners.

Through effective and culturally-aligned land management and administration systems, NRCan supports the comprehensive land claims policy in British Columbia, and the Lands and Trust Services Program of Indian and Northern Affairs Canada (INAC). As a result, Canadians will have improved access to integrated and secure land tenure information on all Canada lands including Aboriginal and heritage lands (including national parks and federal reserves) leading to Aboriginals and Inuit having certainty over property rights which will allow for more effective resource management and economic development.

Key performance indicators:

- increased mineral and energy exploration investment made by the private sector as a result of public geoscience investments
- meet the legal requirements to provide a survey system on Canada Lands to enable economic development

NRCan provides consistent, reliable, high-quality, accurate and precise geographic information on, and above, the Canadian landmass. Through ongoing efforts to increase the availability of topographic information in paper and digital forms, clients and stakeholders will have a sound foundation to make land-use decisions and to build effective geographical information tools.

The Department contributes to sound decisions made by developing countries that are based on accurate information about their geography, environment and natural resources, as a result of adopting Canadian expertise and technology. In addition, the Department will continue to promote opportunities for Canadian earth sciences organizations by opening new markets and by promoting Canadian expertise so that these organizations can participate internationally. This will result in Canadian earth sciences companies accruing benefits from increased access to international opportunities.

Reduced stress on the environmental ecosystems and human health

NRCan provides key information sources for environmental management. Mapping Canada's groundwater resources – the main water source for than 10 million Canadians – provides information and expertise for effective decision-making on the use of the nation's groundwater resources. Policy related to environmental health is informed through earth sciences information, monitoring and assessment capacity to better understand the natural and anthropogenic distribution, bioavailability and hazards to human and ecosystem health and through assessing the consequences of public or private land use decisions and environmental protection plans.

Key performance indicators for this initiative include the use of NRCan assessments of environmental hazards that result in corrective actions, and the percentage of key Canadian aquifers with complete assessments.

Canadians and their institutions understand and prepare for the effects of a changing climate

NRCan assists Canadians in understanding, preparing for, and adapting to the effects of a changing climate on their communities, infrastructure and way of life. This ongoing objective will be achieved through conducting and publicizing earth-sciences research aimed at an improved assessment of the sensitivity and response of Canada's landmass and coastal areas, and through the incorporation of new knowledge in planning and resource management. Resilience to a changing climate requires the use of new knowledge generated in this area not only to manage the economic costs, but also to take advantage of any new opportunities that may result from a changing climate. The key performance indicator for this initiative is the availability of NRCan information to Canadians in developing strategies to adapt to climate change.

Increased safety and security of Canadians

NRCan provides information aimed at reducing the risk to the Canadian population from natural hazards by identifying effective risk mitigation options. In addition, in the event of a civil emergency, needed geographical information will be provided on demand to front-line responders.

By 2007-08, the Department anticipates an increase by targeted user groups in the use of its hazards assessments that may lead to a reduction in the impact of natural hazards on the safety and well-being of the Canadian population, economy and infrastructure. This will be achieved by identifying and targeting mitigation efforts towards those situations with the greatest potential for risk reduction. An example is NRCan's work on earthquake hazard assessment which will be incorporated into the next update of Canada's national building code.

Key performance indicators:

- NRCan meets its emergency response obligations in the event of real or simulated civil emergencies
- increased use of NRCan hazard assessments in planning and hazard mitigation decisions
- meet international treaty obligations to maintain a well defined Canada/U.S. boundary for border security purposes

Starting in 2006-07, and on an ongoing basis, the Department will undertake continuous maintenance programs that ensure that the boundary between Canada and the United States will be well-defined and visible in order to support and ensure sovereignty and public safety, and the effective enforcement of customs and immigration regulations.

ENERGY PROGRAM ACTIVITY – Canadians benefit economically, environmentally and socially from the sustainable production, development and use of Canada’s abundant energy resources

Intermediate Outcomes	Planned Spending (\$M)		
	2007-08	2008-09	2009-10
Domestic and international energy policy analysis, development and advice that supports the sustainable development of Canada’s energy sector	8.5	7.1	7.1
Sustainable development and safe and reliable delivery of electricity with a reduced environmental footprint <ul style="list-style-type: none"> • electricity resources policy • renewable energy programs • radioactive waste management programs 	3.9 71.7 141.2	3.9 40.0 166.9	3.9 37.8 142.7
A fair, efficient and competitive oil, natural gas and petroleum products marketplace that is consistent with Canada’s social and environmental goals <ul style="list-style-type: none"> • petroleum resources policy • statutory programs - Atlantic offshore • energy infrastructure protection 	4.1 1,050.6 3.9	4.0 991.7 0.4	3.8 1,070.9 0.4
Improved energy efficiency of all sectors and increased production and use of alternative transportation fuels in Canada <ul style="list-style-type: none"> • housing • buildings • equipment • house-in-order/government operations • industry • transportation • outreach 	47.3 30.4 9.6 1.9 10.5 18.0 1.2	2.9 0.5 2.3 1.8 4.3 5.9 1.1	2.9 0.5 2.3 1.8 4.3 5.9 1.2
Canadians derive new economic, environmental and social benefits through federal energy S&T <ul style="list-style-type: none"> • built environment • power generation • transportation • oil and gas • industrial sector 	18.8 35.2 24.7 38.2 37.8	11.6 14.8 11.9 20.9 16.4	11.7 15.0 12.1 21.2 16.5
Management and support	10.9	4.2	3.0
Corporate management	25.5	25.3	25.3
Total – Program Activity	1,593.9	1,337.9	1,390.3
FTEs	1,141	993	994

Planning Context

Canadians enjoy an abundant and diverse supply of energy that is secure and reliable. Canada is the sixth largest energy producer, has recoverable oil reserves second only to Saudi Arabia, and is the only OECD country with growing oil production. Canada is the world's third largest producer of natural gas, the second largest producer of hydroelectricity, and the largest producer of uranium. Our Western Sedimentary Basin has oil sands reserves exceeding 174 billion barrels. For generating electricity, Canada's coal supply exceeds 200 years, and we have excellent hydro, wind, solar, biomass and geothermal potential.

As a net exporter of all forms of energy, Canada makes a significant contribution to global energy security and diversity. In fact, Canada's energy production and exports are expected to increase over the next several decades.

While increasing international concerns over energy security and rising energy prices have resulted in a massive boom for Canada's energy sector, and our economy, there is also a growing need to address global environmental issues.

Effective regulations to protect the environment and ensure public health and safety are needed while taking into account the socio-economic importance of new energy projects to Canada. There is also a need for increased investment in energy technology, improving energy efficiency and conservation, and strengthening collaboration between governments and industry in these areas.



Launch of the ecoENERGY Renewable Initiative, Victoria, B.C. - left to right -- The Honourable John Baird, Prime Minister Stephen Harper, Glen Darou, and the Honourable Gary Lunn

In the 2006 Speech from the Throne, the Government identified the reduction of air pollution and greenhouse gas (GHG) emissions as one of its priorities. Air pollution affects the health of Canadians and the environment in many ways, while GHG emissions contribute to global climate change.

As the lead federal department on natural resources, NRCan will be significantly involved over the coming years in addressing this priority. Indeed, energy production and consumption are responsible for a large proportion of emissions that affect the quality of air. Transportation, fossil fuel-fired electric power and upstream oil and gas activities produce over 80 percent of domestic emissions of nitrogen oxides, which are key to the formation of ground-level ozone and particulate matter (the main components of urban smog). These same sources also account for 40 percent of Canada's emissions of sulphur oxide, an important precursor to acid rain. Coal-fired electric power alone is responsible for 34 percent of domestic mercury emissions. Energy production and consumption also accounts for over 80 percent of GHG emissions. A long term energy outlook released in 2006 suggests that fossil fuels will remain, under a business-as-usual scenario, the leading source of energy for Canadians for years to come.

In 2006, the Government of Canada announced a new approach to reducing air emissions. The core element of this new Clean Air Agenda is *Canada's Clean Air Act (CCAA)*, introduced in Parliament on October 19, 2006, which aims to reduce air pollution and GHG emissions through regulations. The CCAA proposes amendments to existing legislation of interest to the Department, including the *Energy Efficiency Act*. In January 2007, the Government announced a suite of complementary initiatives on clean energy. Measures to promote energy efficiency, increase clean energy supply, and develop new energy technology solutions will be implemented by the Department over the coming four years. The Government is also considering measures related to clean transportation and to adaptation to a changing climate.

In the 2006 Report of the Commissioner of the Environment and Sustainable Development, the Commissioner presented an extended review of federal climate change policy and programs. Several large NRCan programs were reviewed and the Commissioner made recommendations to improve their program delivery and the reporting on results. NRCan will be guided by these recommendations as it develops and implements measures under the Clean Air Agenda.

Domestic and international energy policy analysis, development and advice that supports sustainable development of Canada's energy sector

Energy is a major pillar of the Canadian economy, representing 5.9 percent of our GDP and \$84.8 billion in exports in 2005. The energy sector provides over 250,000 well-paying skilled jobs in Canada. While air emissions from energy have increased with economic growth, progress is being made. For instance, Canada's emissions intensity, expressed as carbon dioxide (CO₂) emissions from fuel combustion per unit of GDP, declined by 12 percent between 1990 and 2004.

At the 2006 Council of Energy Ministers' (CEM) meeting held in Whitehorse, federal-provincial and territorial ministers discussed emerging opportunities and challenges facing the Canadian energy sector. They noted that while Canada's jurisdictions engage in different energy activities and face unique challenges and opportunities, they share many common issues and interests, and that collaboration between governments in key areas could generate superior approaches to shared issues and lead to significant benefits.

Key performance indicators:

- Canada's energy contribution to GDP
- Canada's energy exports
- Canada's emissions intensity

To this end, ministers identified three key priorities: regulatory efficiency, energy technology development and innovation, and energy efficiency. They committed to increasing their collaborative efforts in these priority areas and tasked deputy ministers to develop a work plan with measurable outcomes. Furthermore, ministers agreed to meet on an interim basis early in 2007 to confirm their priorities and approve the work plan in order to provide clear direction for the next CEM meeting to be held on September 25, 2007 in Whistler, B.C.

Internationally, Canada's objectives are to promote open and transparent markets, diversity in energy supply, policies to promote energy efficiency and collaboration on R&D. The pursuit of

these objectives is aimed at promoting energy security, stable global economic growth and responsible development. Canada will continue to focus on these priorities through work with international partners, multilaterally and bilaterally, including the partners of the G8, the International Energy Agency (IEA), the North American Working Group and others.

As the lead federal department on energy issues, NRCan will utilize its policy, scientific and program expertise to support the federal Clean Air Agenda. A key priority in 2007-08 will be to support the development and implementation of energy-related measures announced in 2006-07. The Department will participate actively on the horizontal and interdepartmental management of these measures. This will entail a range of policy coordination, development and analysis activities in support of new federal regulations for industrial air emissions.

The Department will also continue to be engaged in international air pollution and climate change fora such as the United Nations Framework Convention on Climate Change Kyoto Protocol, in which it is involved in discussions on ways to address global GHG emissions that are impacting the world's climate system. Moreover, it will be active in a number of other fora, including the U.N. Commission on Sustainable Development; the U.K. G8 Dialogue on Climate Change and Clean Energy; the continuation of the U.K. Dialogue through the 2007 G8 in Germany; and work within other international bodies including the IEA, the Organization for Economic Co-operation and Development Annex 1 Experts Group, the Carbon Sequestration Leadership Forum, and other plurilateral and bilateral arrangements.

Sustainable development and safe and reliable delivery of electricity with a reduced environmental footprint

On January 17, 2007, Prime Minister Harper announced more than \$1.5 billion in funding for the ecoENERGY Renewable Initiative to boost Canada's renewable energy supplies. This initiative – which includes the ecoENERGY for Renewable Power and ecoENERGY for Renewable Heat initiatives – complements the regulatory approach of the proposed *Clean Air Act*. It will create up to 4000 megawatts of renewable energy and is expected to deliver GHG emissions reduction equivalent to one million cars off the road, as well as significant reductions in other pollutants.

As of April 2007, NRCan will develop and launch the ecoENERGY for Renewable Power Initiative, which represents an investment of \$1.48 billion to boost Canada's supply of clean electricity from renewable sources like wind, biomass, small hydro and ocean energy. This program will pay an incentive of one cent for each kilowatt-hour of eligible low-impact renewable electricity production over ten years to eligible recipients. It is estimated that by 2011, this program will result in the production of 14.3 terawatt hours (or 51.5 petajoules) of electricity per year of new, low-impact renewable power along with reductions in GHG emissions and critical air contaminants.

Another important initiative to be developed and launched in April 2007 is the ecoENERGY for Renewable Heat, which will provide more than \$35 million in incentives and industry support to increase the adoption of clean renewable thermal technologies for water and space heating in buildings such as solar air and hot water heating. It is estimated that by 2011, this initiative will

result in the installation of 700 solar thermal units in the industrial/commercial/institutional sector and thousands of units in the residential sector which have the potential energy savings of 0.35 petajoules, along with reductions in GHG emissions and critical air contaminants.

An efficient, reliable electricity system with a low environmental footprint is a broad measure of the welfare of the electricity sector. In this regard, NRCan will continue to work with Canadian and U.S. governments and industry to implement a policy and regulatory framework of mandatory and enforceable reliability standards. Improving regulatory efficiency for the development of electricity infrastructure, without compromising the objectives and effectiveness of the regulations, is a priority for NRCan. Policy support for technology improvements in fossil fuel use and initiatives to shift the generation mix from GHG-intensive fuels will also be important in reducing the overall emissions intensity of the electricity sector.

On the nuclear side, NRCan's overall objectives are to support the strict, science-based regulation of domestic and international nuclear activities while promoting international cooperation, develop the policy framework for managing wastes responsibly, encourage the substitution of low emission nuclear for high emitting electricity sources, and maximize opportunities for Canada's nuclear industry. An overarching objective is to develop a policy framework which would facilitate increased public confidence in nuclear energy and the institutions which manage it.

Key performance indicators:

- number of petajoules (PJ) of zero or low emission electrical and thermal energy in Canada
- index of electricity reliability
- emissions intensity of electricity generation in Canada
- public confidence in nuclear fuel cycle activities

With respect to the management of radioactive waste in Canada, NRCan will assist in the clean up of certain cold-war era uranium mine sites in northern Saskatchewan. The Department will also continue to focus its effort on dealing with the impacts of the past waste management practices in the Port Hope area. To date, a total of \$260 million has been set aside to support the project which is expected to be completed in the next 10-15 years.

In accordance with the *Nuclear Fuel Waste Act*, the Department will continue to support the Minister in fulfilling his responsibilities for the long-term management of nuclear fuel waste. Moreover, the Minister is looking at proposals to revise the *Nuclear Liability Act* which establishes the liability of a nuclear operator to pay civil damages and compensation to third parties in the event of a nuclear incident at a nuclear facility.

Regarding Canada's nuclear legacy liabilities, the Government of Canada committed \$520 million (June 2006) to fund the 5-year, start-up phase of new, long-term strategy to deal with liabilities and implement long-term solutions for the associated wastes. The liabilities are largely located at Atomic Energy of Canada Limited research sites, and consist of shutdown buildings, a wide variety of buried and stored wastes, and contaminated lands. Work under the 5-year start-up phase of the Nuclear Legacy Liabilities Program will be focused on accelerating the decommissioning of shutdown, contaminated buildings, and addressing other health, safety

and environmental priorities. Also, work to lay the groundwork for future phases of the strategy, such as the construction of waste characterization facilities at both the Chalk River Laboratories (Chalk River, Ontario) and Whiteshell Laboratories (Pinawa, Manitoba) will be completed. Public consultations on the further development of the long-term strategy are planned for 2007.

A fair, efficient and competitive oil, natural gas and petroleum products marketplace that is consistent with Canada's social and environmental goals

The exploration and development of petroleum resources and exports of these commodities contribute significantly to Canada's economy. In 2005, the petroleum sector represented 4 percent of the country's GDP. Investment in Canada's oil and gas industry has more than doubled from \$18.9 billion in 1997 to \$45.3 billion in 2005. As well, 15 percent of Canadian exports were petroleum resources and represented approximately \$70 billion. The Department provides an energy lens to policy and regulatory issues related to petroleum resource development north and south of 60. It promotes the responsible development of these resources, provides advice, and enhances the investment climate by ensuring regulatory efficiency and developing options for addressing Aboriginal community involvement in major energy projects. In addition, the Department has statutory responsibilities under the *National Energy Board Act*, the *Accord Acts*, *Canada Oil and Gas Operations Act* and is responsible for preparing and reviewing contingency plans for potential use of emergency preparedness during an oil supply shortage pursuant to the *Energy Supplies Emergency Act*.

Over the planning period, the Department will continue to fulfill these policy roles and manage the approval processes for future energy projects anticipated to total over several billions of dollars. The Canadian Energy Pipeline Association estimates that \$20 billion in pipeline investments will be required over the next two decades for the distribution and storage of petroleum products alone.

Key performance indicators:

- increased investment in Canada's oil and natural gas industry
- increased contributions to GDP from Canada's oil and natural gas industry
- increased public awareness and understanding of petroleum markets

Building on Smart Regulations, NRCan's Frontier and Offshore Regulatory Renewal Initiative will continue to renew and modernize the regulatory environment for Canada's frontier and offshore oil and gas sector. This will be done in a manner that balances the sector's future growth and contributions to Canada's economic development with Canada's social and environmental goals.

NRCan provides timely and accurate information to the federal government, industry and the public concerning crude oil, natural gas and refined petroleum products. Such information is designed to impart transparency regarding the supply and pricing of these commodities and to enhance public awareness and understanding.

Moreover, the Department will continue to prepare security vulnerability assessments of energy facilities – natural gas and crude oil pipelines, hydro-generation dams and electrical transmission lines – both onshore and offshore, develop bi-national assessment methodology and best

practices, and implement physical security and cyber-related recommendations of the Canada-U.S. Power Outage Task Force. It will also continue to provide expert advice to Public Safety and Emergency Preparedness Canada and facility owners on the engineering, design, and protection of facilities.

Improved energy efficiency of all sectors and increased production and use of alternative transportation fuels in Canada

Canadians spent almost \$135 billion in 2004 on energy to heat and cool their homes and offices and to operate their appliances, cars and industrial processes. Between 1990 and 2004, the latest year for which figures are available, secondary energy use increased by 23 percent. However, energy efficiency improvements are being made throughout the economy. Without improvements in energy efficiency made to buildings and equipment and the changes in behaviour of energy users, the increase in energy use would have been much higher.

In January 2007, the Government announced a suite of initiatives on clean energy under the banner of ecoENERGY. It includes measures to encourage and assist Canadians to improve their

Did you know? From 1990 to 2004, Canada's overall energy efficiency improved by an estimated 14 percent, as measured by NRCan's OEE Energy Efficiency Index. In 2004 alone, these improvements are estimated to have lowered secondary energy use by 902.7 PJ from what it would have been, lowered GHG emissions by 53.6 megatonnes and saved Canadians almost \$14.5 billion in energy costs.

energy use in all of the major end-use sectors: housing, buildings, equipment, industry and transportation (<http://oee.nrcan.gc.ca>). NRCan aims to increase energy efficiency within each sector by persuading individuals and organizations to purchase goods that are more energy efficient, influencing the energy-use practices of individuals and organizations, and promoting technologies that provide the opportunity to improve energy efficiency.

ecoENERGY for Buildings and Houses is a new initiative that encourages the construction and retrofit of more energy efficient buildings and houses. Planned activities for 2007-08 include information sharing,

developing and supporting energy rating and labelling systems, and providing training for professionals. The government also plans to engage other jurisdictions to support the development, and encourage adoption and implementation of more stringent model energy codes and/or other regulatory instruments for buildings, and more stringent energy efficiency requirements for houses.

ecoENERGY Retrofit Initiative is a new program to provide financial assistance to Canadian homeowners and small industrial and commercial businesses and institutions to support energy efficiency retrofits. The *Energy Efficiency Act, 1992*, provides for the making and enforcement of regulations concerning minimum energy performance levels for energy-using products, as well as the labelling of energy-using products and the promotion of energy efficiency and alternative energy. NRCan, upon Governor-in-Council approval, sets energy efficiency standards and regulations, and through various programs encourages the purchase of highly energy efficient products. In October of 2006, the Clean Air Regulatory Agenda was announced and included two

elements relating to the *Energy Efficiency Regulations*: proposed revisions to the *Energy Efficiency Act* that would increase its scope and effectiveness and advanced notice of three proposed amendments to the regulations. These amendments would introduce minimum energy performance standards for twenty additional products and increase the stringency of existing standards for ten products. The Department will also continue support of equipment labeling initiatives such as ENERGYSTAR to help consumers identify and choose products with better energy efficiency.

With respect to the industrial sector, NRCan works with the Canadian industry to improve their energy intensity – the energy they use per unit of output. Through ecoENERGY for Industry, NRCan will encourage accelerated uptake of energy-saving investments across Canada’s industrial sector by supporting the sharing of best practices, providing training, cost-sharing energy assessments and undertaking analysis. This initiative is a reaffirmation of a long-standing, successful program (Canadian Industry Program for Energy Conservation).

Key performance indicators:

- percent improvements in energy efficiency
- number of petajoules energy savings due to energy efficiency
- renewable fuel production as a percentage of total transportation fuel
- alternative fuel use as a percentage of total transportation fuel

As part of the Clean Transportation Strategy, NRCan objectives in the transportation sector are to improve the energy efficiency of new vehicles, influence vehicle operation and maintenance, and expand the production and use of alternative transportation fuels. ecoENERGY for Personal Vehicles will support the voluntary Memorandum of Understanding (MOU) with the automobile industry to reduce GHG emissions from the on-road personal vehicle fleet by 5.3 MT in 2010, helping to provide the foundation for new fuel consumption regulations. It will also provide and improve decision-making tools that influence consumers’ vehicle purchasing decisions. ecoENERGY for Fleets will promote the uptake of existing and emerging new technologies such as energy-efficient vehicle components and hybrid technologies and best practices such as fuel management techniques in the commercial/institutional road transportation sector. Other activities provide private sector fleet managers with information, workshops, technical demonstrations and training programs on fuel-efficient practices for fleet vehicles.

NRCan is working with Agriculture and Agri-Food Canada and Environment Canada on the development of a strategy to implement the Government of Canada’s commitment to reach a five percent average renewable fuel content in transport fuel by 2010. In December 2006, the government announced it would regulate the use of renewable fuels in Canada and deliver \$345 million to assist farmers and rural communities to seize new market opportunities in the agricultural bioproducts sector.

As part of the Clean Air Regulatory Agenda announced in October 2006, the Government of Canada has committed to developing and implementing new fuel consumption regulations, beginning with the 2011 vehicle model year, to ensure sustained reductions in on-road motor vehicle GHG emissions.

NRCan provides Canadians with information on energy efficiency and energy conservation, and directs them to departmental programs that can help them improve energy efficiency in their transportation and household energy choices. More information on the Department's past performance in the area of energy efficiency can be found in NRCan's *Report to Parliament Under the Energy Efficiency Act* at: oee.nrcan.gc.ca/parliament05-06.

Canadians derive new economic, environmental and social benefits through federal energy S&T

Energy S&T provides the science knowledge foundation and innovative technology-based solutions for the sustainable production, conversion and use of Canada's energy resources. To ensure that NRCan is focusing on the right energy S&T, as well as doing it right, an energy S&T strategy will be finalized in 2007-08.

Since both public and private sector stakeholders have emphasized the need to focus on federal energy S&T investment, the energy S&T strategy will identify a limited number of priorities, taking into consideration NRCan's mandated responsibilities and external advice of the National Advisory Panel on Sustainable Energy S&T, the Canadian Academy of Engineering, the Energy Technology Working Group of the Council of Energy Ministers (CEM), the National Round Table on the Environment and the Economy, other stakeholders, and relevant analytical studies, such as the modeling work of the International Energy Agency (IEA).

A component of the energy S&T strategy is the \$230-million ecoENERGY Technology Initiative announced in January 2007. As part of the government's proposed *Clean Air Act*, the initiative aims to accelerate the development and market readiness of technology solutions in clean energy that will reduce emissions of particulates, gaseous pollutants, toxic substances and GHGs arising from the production and use of energy. Most of the projects will be carried out by public-private partnerships. The ecoENERGY Technology Initiative six strategic portfolio areas are:

- clean fossil fuels – including the environmental aspects of oil sands production;
- clean integrated electricity – including clean coal and carbon capture and storage, distributed power generation, and next generation nuclear (Generation IV);
- bio-based energy systems;
- low emission industrial systems;
- clean transportation systems; and
- built environment – including the integration of renewable energy.

To ensure an effective and efficient delivery of energy S&T, the strategy will employ a single integrated S&T program spanning the innovation spectrum from basic research to near-commercial demonstration. By consolidating existing energy S&T programs, including the Program of Energy Research and Development, Technology and Innovation R&D, Technology Early Action Measures and the Canadian Transportation Fuel Cell Alliance, a single window will be created for the benefit of clients who will no longer be faced with a multiplicity of programs addressing different parts of the innovation spectrum.

The efforts of the Energy Technology Working Group of the CEM to foster collaboration amongst governments in Canada to develop sustainable energy technologies, has culminated in a new model for partnering in the development and demonstration of energy technologies. The model includes defining priorities of common interest, developing technology work plans, facilitating the formation of public-private sector projects, and recommending that governments support these projects. The model will be refined during the coming year and projects submitted to energy ministers for approval at their CEM 2007 annual meeting.

With respect to the built environment, NRCan will continue a range of activities designed to increase energy efficiency and reduce air emissions in this important area. For example, North America's first large-scale seasonal storage project will be completed in 2007. Solar energy will provide over 90 per cent of space heating requirements for the 52 homes subdivision in Okotoks, Alberta, leading to reductions of up to 5 tonnes of GHG emissions per home.

Other planned activities include the release of new versions of software tools for the design and assessment of houses and buildings, and continued work on the recently-established Canadian Building Energy Code Collaborative, which supports updating and promoting a model energy code for buildings.

With respect to power generation, NRCan has increased its R&D in clean coal technology, including CO₂ capture and sequestration, to provide a solution to emissions and air quality issues. Although progress has been made on sequestration, the cost of capturing CO₂ is a significant barrier. Consequently, the integrated capture of CO₂ and other priority substances, such as toxic mercury and smog-producing substances such as sulphur oxides, nitrous oxides and particulate matter is being pursued. In addition, R&D continues on oxy-fuel combustion, a new clean coal technology which facilitates CO₂ capture. NRCan will provide R&D support for a new coal-fired power plant in Saskatchewan, to demonstrate oxy-fuel combustion as part of a CO₂ capture and storage project.

Key performance indicators:

- technology scale-up (i.e. relative number of our projects moving from one category to the next – bench-scale research, pilot-scale research, demonstration, commercialization)
- technology focusing (i.e. project distribution along the innovation curve)
- number of codes published, presentations, active MOUs, patents, licences issued
- number of energy S&T partnerships both domestic and international

A critical area of power generation is integration into the grid of electricity from renewable and other sources. NRCan will continue to focus on developing preliminary connection guidelines leading to codes and standards for both utility connection of distributed generation systems as well as equipment standards that are currently seen by industry and end-users as a barrier.

NRCan is supporting R&D to meet Canada's commitment to Generation IV International Forum, a multilateral international collaboration to develop nuclear energy technology for application post 2020. Canada is focusing on Super Critical Water Cooled Reactor and Very High Temperature Reactor systems. Future activities include development of materials, fuel, safety systems and technologies for hydrogen production from Generation IV nuclear systems.

NRCan will continue to conduct S&T related to transportation – hydrogen and fuel cells. A key aspect is promoting knowledge derived from the work. NRCan will continue to work with industry to improve the durability and reliability of fuel cells and to lower their costs. NRCan-supported hydrogen fueling stations will be deployed in several locations across Canada.

NRCan will continue to conduct and support oil and gas S&T to reduce environmental impacts and increase production efficiency. Activities to develop new and improved oil sands and heavy oils upgrading technologies that are less energy intensive and produce higher quality products at lower costs include: a sulphur-resistant catalyst for refining bitumen that will use less energy and bio-catalyst and field upgrading programs that will eliminate the use of water extraction in the upgrading process.

NRCan's evaluation and development of new or improved technologies to reduce the operating and capital costs of producing clean dry bitumen and heavy oil include: developing technologies to consume and consolidate existing and future accumulations of mature fine tailings, for example by integrating tailings back into reclamation plans, generating released water for recycling. In the longer term, a permanent solution will be to completely eliminate the need of tailings ponds in oil production.

Did you know? An important area in the industrial sector is the demonstration of process integration in industrial operations. Process integration identifies and corrects plant inefficiencies to reduce both energy costs and environmental impacts. Pilot projects to date with both large- and medium-sized Canadian industrial plants – such as pulp and paper, fertilizer, food and beverage – have identified potential CO₂ reduction of over 400 ktonnes/yr, and 10 to 35 percent fossil fuel savings at a payback of less than two years worth over \$58 million/yr. In 2007-08, NRCan will continue its support to process integration and will develop tools and material information necessary to increase Canadian consulting capacity to conduct site-wide energy analyses.

NRCan will conduct collaborative S&T to increase reductions in fugitive and vented GHG emissions as well as air contaminants from oil and gas production. NRCan will also conduct new S&T programs that focus on salt contamination and remediation in arctic climates. It will also continue to address environmental issues related to pipelines, such as contamination from scaling, oil and gas leaks, and drilling waste.

The Department continues to focus on biomass feedstocks, bio-refining and exploring the potential for industrial bio-processing. NRCan R&D will support

industries that handle large amounts of biomass, such as pulp mills, sawmills, municipal sewage treatment and landfill, food and agricultural products processing. This will encourage the use of their own residues to produce energy and/or other added value products within their operations as well as for export. Other innovations include research into the replacement of fossil fuels and fossil fuel-based feedstock with biomass such as wood in steelmaking.

NRCan and DFAIT will negotiate a trilateral agreement on energy S&T collaboration with the U.S. and Mexico to provide the necessary legal framework for intellectual property protection, the transfer of funds and the exchange of personnel. The trilateral energy S&T agreement responds directly to the priority of a sustainable, secure and affordable energy supply identified

by the leaders of Canada, the U.S. and Mexico at the 2006 Cancun Summit. Minister Lunn and the U.S. and Mexico Energy Secretaries responded to the need for collaboration on innovation, technology development and deployment to enhance energy security committing to four priority actions – one of which was to undertake the necessary steps to develop the trilateral legal instrument on energy science and technology collaboration.

Other on-going international collaborations include substantial participation in the IEA R&D programs and activities, including the Committee on Energy Research and Technology, Working Parties (fossil fuels, renewable, end-use) and Implementing Agreements.

Additionally, NRCan is encouraging the transfer of Canadian clean energy technologies such as clean coal and small hydro to new, developing markets in China, India and Africa. NRCan will also continue to monitor Sustainable Development Technology Canada (SDTC) activities, in particular for the follow-up to the demonstration stage with SDTC financing of successful Program of Energy Research and Development and Technology and Innovation R&D projects.

SUSTAINABLE FOREST PROGRAM ACTIVITY – Healthy forests continue to provide balanced social, environmental and economic benefits to Canadians

Intermediate Outcomes	Planned Spending (\$M)		
	2007-08	2008-09	2009-10
An integrated national forest sector innovation system that addresses current and emerging issues <ul style="list-style-type: none"> • partnership and sector outreach • key sector/horizontal issues • internal governance • information 	2.5 1.4 7.6 6.3	2.6 1.4 8.4 6.3	2.6 1.4 3.2 6.3
Canada's climate change forest reporting obligations are met, and forest-based options for adaptation to, and mitigation of, climate change are developed <ul style="list-style-type: none"> • impacts and adaptation of climate change on Canada's forests • monitoring and mitigating policy 	4.4 2.6	4.4 2.6	4.4 2.6
Canada is a globally-recognized leader of forest sector sustainability <ul style="list-style-type: none"> • secure and implement international arrangements and agreements • promote Canada's foreign and domestic policy objectives 	1.1 0.1	1.1 0.1	1.1 0.1
Forest losses are addressed through the provision of balanced social, economic and environmental information and advice <ul style="list-style-type: none"> • assessing Canada's forests • maintaining and enhancing forest sustainability through defining and mitigating threats • growing the limits of forest utilization 	2.8 46.5 28.1	2.8 49.2 27.1	2.8 10.8 27.1
Forest-dependent communities have choices and options for economic opportunities <ul style="list-style-type: none"> • forest and community development • Aboriginal communities in Canada's forest sector 	35.1 5.9	33.2 6.0	9.1 3.1
Canada's forest industry competes successfully in the global forest products market <ul style="list-style-type: none"> • enhance global competitiveness of Canada's forest products industry • maintain, diversify and expand markets • diversify products, processes and end-uses through innovation 	1.7 17.0 65.5	1.7 17.1 62.4	1.7 2.6 5.7
The sustainable forest program activity is managed effectively and efficiently <ul style="list-style-type: none"> • physical infrastructure • management functions 	9.8 17.2	9.8 15.9	9.8 14.8
Corporate management	12.7	12.7	12.7
Total – Program Activity	268.3	264.8	121.9
FTEs	973	975	974

Planning Context

Canada's forests are our largest and most important biological resource. As one of the pillars of the Canadian economy, the forest sector was built on abundant, high-quality forests, and affordable energy resources. But in today's globalized economy, competitors have access to cheaper wood, faster-growing trees, lower-cost labour, and, in some cases, a lighter regulatory burden. Given the nature of this competitive environment, Canada's forest sector cannot maintain the *status quo*, waiting for the next up-turn in the business cycle to sustain its leadership.

Current and future challenges are more structural than cyclical, and they call for a shift in thinking. To remain competitive, Canada must capitalize on the skills, innovation, and creativity of our talented people to realize new and expanded value from forests, while setting a global standard for sustainability. The forest industry will drive its own future, but NRCan does not exempt itself from the need to contribute to this transformation by:



- embracing the inevitability of change and resisting the *status quo*;
- shifting the current thinking from the manufacturing of products to the knowledge economy;
- investing in people, innovation, and market development;
- setting new standards of social and environmental responsibility; and
- encouraging the sector to become smarter, faster, and more efficient than the global competition.

By taking action in areas where it has a legitimate role, NRCan has the capacity to contribute to the forest sector's future success and worldwide competitiveness. This includes promoting and conducting forest research and development, and developing policies that reduce barriers to innovation and facilitate investments. NRCan will create value by promoting a culture of innovation, increasing investments to promote new technologies, and by improving the effectiveness of its R&D expenditures.

Forest disturbances such as wildland fire, insect infestations, diseases, and extreme weather events have always had a significant impact on Canada's forests. A long-standing objective of NRCan is to work with partners to develop and implement effective, long-term disturbance mitigation and adaptation strategies, that include consideration of prevention, suppression, salvage, and reforestation. The establishment and use of a national framework to assess indicators of forest sustainability, and the continuous improvement in the understanding of how these indicators of sustainability are affected by the interactions of human activities with natural processes are key elements in the development of strategies. NRCan strives to ensure that the best, most accurate and up-to-date knowledge of Canada's forest ecosystems is both available, and considered in forest management decision making.

Did you know? Specific forestry investments include:

Federal response to the MPB infestation:

- controlling the spread: \$80 million
- recovering economic value: \$54.5 million
- protecting forests and communities: \$54.5 million.

Long-term competitiveness strategy:

\$122.5 million over three years

- investments in forest innovation: \$55 million
- Canadian Wood Fibre Centre: \$10 million
- establishment of a national forest research institute: \$5 million
- Canada Wood Program: \$20 million
- Value to Wood Program: \$8 million
- North American Wood First Initiative: \$12 million
- national forest pest strategy: \$12.5 million.

Beginning in last fiscal year, NRCan is investing \$322.5 million over three years in addressing key forest sector challenges, including forest industry long-term competitiveness, and forest pest management, in particular to address the current Mountain Pine Beetle (MPB) infestation in British Columbia. This funding is part of the \$400 million announced in Budget 2006 to assist the forest industry.

NRCan delivers its forest sector work within the framework of the following six intermediate outcomes. These outcomes are interrelated elements of a comprehensive approach for influencing the future success of Canada's forest sector. NRCan pursues these outcomes through coordinated action with other federal departments, provinces and territories, industry players, and non-governmental organizations.

An integrated national forest sector innovation system that addresses current and emerging issues

NRCan believes that one of the key forest sector issues to be addressed from a national perspective is competitiveness. Core to this is the enhancement of innovation: the sector must meet and exceed the innovations of its international competitors in order to ensure its long-term economic growth.

Under the Government of Canada new Forest Industry Long-Term Competitiveness Strategy, NRCan will launch the Canadian Wood Fibre Centre – a virtual public-private collaboration inaugurated in 2006 – that will perform targeted research in order to increase value from the Canadian forest. This year will also see the establishment of a national forest research institute that not only brings together the three existing forest-products research institutes (Forintek, FERIC, Paprican) but also includes the new NRCan-created Canadian Wood Fibre Centre to create one of the largest forest sector research centres in the world. The institute will be a key catalyst for implementing an innovation agenda that will improve the long-term competitiveness of the sector.

Key performance indicators:

- a national forest research institute, which includes the new NRCan-created Canadian Wood Fibre Centre, is established and defines innovation priorities and goals to improve the competitiveness of the forest sector in Canada
- the Canadian Wood Fibre Centre is fully operational, and has integrated its priorities with the national forest research institute
- academia is actively engaged in the development and launch of a national forest innovation work program

One of NRCan's initial steps, in partnership with relevant federal departments and universities, will be to benchmark the state of innovation with the forest sector. This knowledge will then guide the ongoing development of the forest sector innovation system, as well as highlight the potential policy levers that governments could use to increase innovation.

NRCan will strive to become a high-performance innovation organization itself, one that understands and employs best-in-class innovation management principles and practices to set priorities, thus providing the insight needed to understand the challenges facing its partners.

In the medium-term, NRCan will facilitate the development of effective federal-provincial consultation mechanisms for setting forest sector innovation priorities that are in the public interest, and will facilitate the creation of strategic linkages between the forest innovation system, academia, and federal granting councils.

NRCan's long-term objective is to facilitate the establishment of an integrated national forest sector innovation system that sets strategic priorities, and to have measurably positive innovation trends in evidence by 2011. This is a key element in addressing the long-term competitiveness challenges of the sector, and important steps will be taken in fiscal 2007-08 to move this agenda forward.

Canada's climate change forest reporting obligations are met, and forest-based options for adaptation to, and mitigation of, climate change are developed

NRCan's long-term objective is to develop science-based options for the forest sector to adapt to, and help mitigate climate change. In collaboration with key partners, NRCan will develop the scientific knowledge, tools and strategies to help the sector balance environmental, social and economic values under a changing climate.

NRCan will continue to work closely with provincial and territorial governments on forest-related climate change policy analysis and development, and work to ensure that Canada's circumstances and interests are represented in international climate change agreements. NRCan will also continue to fulfil Canada's forest-related climate change reporting commitments.

Key performance indicators for this intermediate outcome are: information and options for inclusion of forests in adaptation strategies, including options for managing Canada's forest; and forest-related information is reported in Canada's National Inventory Report of Greenhouse Gas Sources and Sinks to the U.N. Framework Convention on Climate Change by April of each year.

Canada is a globally recognized leader of forest sector sustainability

NRCan's objective is to increase Canada's ability to advance the interests of its domestic forest sector at an international level. It is also the objective of NRCan to contribute to the development and implementation within Canada of the highest standards of sustainable forest management, and to encourage the acceptance and emulation of equally high standards by other forest countries.

In 2007-08, NRCan will launch a new approach to the State of Canada's Forests report to Parliament. The new approach will be issue-driven, and optimized for ease of use. Robust forest sector statistics and trend analysis will be presented. An annual version of the report will still be published, and it will be supplemented by quarterly web-based updates.

Key performance indicators:

- number of forest countries actively committed to the Canada-led initiative to secure an international agreement on sustainable forest management
- assessment of the new approach to the State of Canada's Forests report to Parliament
- value of leveraged contributions in key bilateral science and technology relationships, including the U.S., Russia, and China

In the medium term, a program of technical cooperation with Russia will be established, leading to a circumboreal network of model forests. NRCan will also work with all of its partners among forest countries towards the establishment of an international agreement on forest management.

In particular, the International Model Forest Network Secretariat – newly moved to NRCan – will facilitate the dialogue around sustainable forest management through the maintenance and establishment of model forests globally.

Forest losses are addressed through the provision of balanced social, economic and environmental information and advice

Natural disturbances such as wildland fires and insect infestations are a fact of life, and have a huge influence in Canada's forests. NRCan has a key role to play in developing the knowledge and strategies needed to help mitigate losses from these disturbances, and to develop tools that integrate our knowledge of the social, economic and environmental dimensions of our forests for decision-making.

The scale of the current MPB infestation in British Columbia (B.C.) is vast, and the beetle's rapid eastward spread constitutes a major threat to Alberta's mountain forests. The infestation even has the potential to threaten the boreal forest, which constitutes the majority of Canada's forest, stretching from northeastern B.C. to Newfoundland. Community impacts are becoming clear at a large scale in B.C.

Key performance indicators:

- full implementation of the controlling the spread element of the federal response to the MPB infestation, including mitigating the eastern spread of the beetle by applying control strategies to 375,000 hectares of beetle-affected forested areas
- number of Canadian jurisdictions and value of their contributions coordinating their operational management of forest pest risks under a national forest pest strategy
- number of Canadian jurisdictions and value of their contributions coordinating their operational management of wildland fire risks under the Canadian Wildland Fire Strategy

The new federal response to the MPB Infestation will be implemented in 2007-08 in an integrated program with the Province of B.C., and other areas requiring front line control efforts. The response has three key elements: controlling the spread into Alberta and the boreal forest; protecting forests and forest communities; and recovering economic value from beetle-killed wood (the latter two elements

are discussed in sections below). Under the controlling the spread element, control strategies will be applied to 375,000 hectares of beetle-affected forested areas.

Under the Forest Industry Long-Term Competitiveness Strategy, NRCan will develop a national forest pest strategy in 2007-08. This strategy will be a risk-based decision-making framework that will ensure an integrated response to the increasing threat of forest pests in Canada. This work will be undertaken in consultation with provinces and territories, industry, communities, First Nations, and non-governmental organizations.

In the medium-term, NRCan will work towards the implementation of the new Canadian Wildland Fire Strategy, in particular through the development and sharing of knowledge and tools that are needed for effective management of wildland fires in Canada.

Forest-dependent communities have choices and options for economic opportunities

Canada's forest-based communities are currently facing difficult challenges as a consequence of forest industry restructuring, changing markets, increased international competition, and major natural disturbances such as wildland fire and insect infestations. Various NRCan programs provide information and tools that help forest-based communities adapt and position themselves for change.

Under the protecting forests and communities element of the new federal response to the MPB infestation, NRCan will strive to mitigate impacts of the infestation on community safety and forest resource sustainability, as well as identify economic diversification options for the long-term prosperity of the approximately 180 affected communities. Safety programs will be implemented for the reduction of the risk to communities from wildland fire fueled by beetle-killed trees. Assessing options for the next generation of forests to replace beetle-killed trees will also be a priority. Finally, effort will be devoted to identifying options for economic diversification – including new opportunities for forest products and forest services – in support of the long-term prosperity of affected communities, including First Nations communities.

Key performance indicators:

- full implementation of the protecting forests and communities element of the federal response to the MPB infestation, including developing options for new natural resource-based opportunities for affected communities
- number of partnerships and their contributions under the Forest Communities Program
- establishment of baseline data on the resilience of Aboriginal and non-Aboriginal forest-based communities

Also in 2007-08, NRCan will implement the new Forest Communities Program – a successor to the Model Forest Program – at a set of six to ten sites, and expects the participation of more than 100 community partners by 2009. NRCan will also complete an assessment of the performance of the current First Nations Forestry Program, and will tailor modifications to account for the changing circumstances of Aboriginal communities.

In the medium term, NRCan, in partnership with relevant federal departments, will work towards the establishment of indicators, and collect baseline data on forest community resilience and forest-based social values.

The Department's long-term objective is to work with partners to help position forest-based communities to effectively meet the challenges of transition, and take advantage of opportunities created by change.

Canada's forest industry competes effectively in the global forest products market

Canada's forest industry is facing structural changes that are challenging its ability to compete in its key traditional markets. Key to its future success will be embracing changes that capitalize and build on Canada's strengths. This means going beyond innovations that improve efficiency and reduce costs: it means finding new end-uses for forest products, developing new products that go beyond the traditional forest-sector boundaries, and developing new markets in growth areas. It also means addressing the technical barriers that can limit trade in new and traditional markets, and continuing to streamline the domestic policy and regulatory environment to support competitiveness, while maintaining environmental and social values.

Key performance indicators:

- reduction of technical barriers to wood use in offshore, and North American markets
- improved competitiveness and productivity of the Canadian secondary-manufacturing wood sector
- expansion of wood markets in targeted offshore, and North American markets

Under the new Forest Industry Long-Term Competitiveness Strategy, NRCan will invest in competitiveness, market development, and innovation initiatives during 2007-08. This will include investments in the development and adaptation of emerging and breakthrough technologies and products through the Investments in Forest Innovation Initiative. The Value to Wood Program facilitates the development of value-added wood product opportunities for enhancing the competitiveness and productivity of the Canadian secondary-manufacturing wood sector. The new North American Wood First Initiative will aim at increasing the use of wood in non-residential construction in North America (e.g., hospitals, schools, etc.) as a way of increasing the overall demand for, and use of wood products. The Canada Wood Program will focus on increasing offshore markets for Canada's wood products through market promotion and addressing technical trade barriers.

Under the recovering economic value from beetle-killed wood element of the new federal response to the MPB infestation, NRCan will also invest to recover, to the extent feasible, economic value from beetle-killed trees. The forest industry will be encouraged, through modified and improved planning scenarios, to salvage as much timber as possible while wood fibre quality remains adequate for processing. Options to use salvaged timber in non-traditional products and markets will be explored.

MINERALS AND METALS PROGRAM ACTIVITY – Canadians derive sustainable social and economic net benefits from the assessment, development and use of mineral expertise, mineral resources, and related industries

Intermediate Outcomes	Planned Spending (\$M)		
	2007-08	2008-09	2009-10
Investment in Canada’s exploration and mining industries is strengthened			
• investment	0.8	1.1	1.2
• tax	0.9	0.9	0.8
• exploration	0.3	0.3	0.2
Market access for mineral and metal commodities (including recyclables) and related industries is promoted and, where necessary, protected; Canada’s international prominence and investment in mining are secured			
• international liaison and trade relations	0.9	0.9	0.9
• industry and commodity analysis	1.1	1.1	1.4
• business development	0.6	0.5	0.5
Canadians benefit from R&D with respect to minerals, metals and value-added products			
• mining, processing and environmental research	15.3	15.1	15.0
• advanced materials technology development	11.0	12.1	21.1
Safety and security of workers and the public throughout Canada are improved with respect to explosives			
• explosives regulations and permitting	2.9	2.9	2.9
• explosives S&T	1.8	1.8	1.8
Canadians are provided with information to improve decisions regarding minerals and metals; regulatory programs meet Government of Canada objectives			
• minerals and metals statistics collection and dissemination	2.5	2.6	2.6
• environmental assessments and regulatory processes	0.6	0.6	0.6
• special projects and strategic priorities	0.5	0.5	0.5
Policies enhance the productivity and sustainability of the minerals and metals industries			
• policy	0.2	0.2	0.2
• Aboriginal affairs	0.5	0.5	0.5
• planning, management and support	4.9	4.8	4.8
Corporate management	12.7	12.6	12.6
Total – Program Activity	57.5	58.5	67.6
FTEs	593	596	596

* All years include funding for the announced relocation of the Materials Technology Laboratory to Hamilton, Ontario.

Planning Context

Throughout our history, minerals and metals have played a central role in building Canada and in providing economic opportunities for its citizens. Today, the minerals and metals industries are more crucial than ever to our competitiveness and prosperity. In 2005, they directly employed 388 000 Canadians, generated \$51 billion in GDP (4 percent of the national total), and accounted for 15 percent of Canada's exports.

The indirect impacts are far-reaching. Approximately 2360 firms provide legal, financial, engineering, environmental and other services to the mining industry. Toronto is one of the world's leading centres for mine finance. Vancouver is a hub of exploration companies and expertise. Over the past five years, minerals and metals accounted for 65 percent of the volume of shipments handled by Canadian ports and for 60 percent of the revenue generated by railways in Canada.



A non-destructive testing technician, certified by NRCAN, conducts an ultrasonic inspection to check for cracking around bolt holes in the landing gear of this CC144 Challenger aircraft.

Minerals and metals are key to the continued success of the Canadian economy and the standard of living of Canadians. Productivity growth and levels in the minerals and metals industries far surpass other sectors of the Canadian economy, and have done so for decades. The strong productivity levels have led to high wages. In 2005, average wages and salaries were \$1099 per week, 18 percent, 24 percent and 25 percent higher than those of employees in finance, manufacturing and construction, respectively. Weekly earnings in the total economy averaged about \$700.

Minerals and metals touch our lives in many other ways. They are key contributors to the vitality of our rural, northern and Aboriginal communities. Approximately 1200 Aboriginal communities are located within 200 kilometres of exploration properties or producing mines.

Canada is one of the world's leading mining countries and ranks among the largest producers of minerals and metals. In 2005, Canada ranked first in the global production of potash and uranium, and ranked among the top five in the production of aluminum, cadmium, cobalt, gypsum, magnesium, nickel, platinum group metals, titanium concentrate, and zinc.

Canada is a world leader in mineral governance, exploration, extraction, processing, and related industries. Canada is one of the world's principal destinations for mineral exploration, accounting for 19 percent of global spending, and is a dominant player in the global exploration industry both in terms of activity and as a source of funds for exploration. In 2005, Canada accounted for 42 percent of the equity raised for exploration and mining in the world. Canadian exploration and mining companies are active in over 100 countries around the world and account for 11 percent (\$50 billion) of Canada's direct investment abroad.

In general, the minerals and metals industries are enjoying a prosperous period. Global mineral and metal prices are strong in nominal terms, in part due to the growing demand for minerals and

metals in emerging economies such as China and India. China's share of the global consumption of base metals jumped from 5 percent in the 1980s to 22 percent in 2005. As a result of buoyant commodity prices in 2006, foreign direct investment in Canada's mining industry was significant. Notable examples include the purchase of Inco Limited by Brazil-based Companhia do Vale Rio Doce and the acquisition of Falconbridge Ltd. by Swiss-based Xstrata plc. Also as a result of strong prices, exploration activity was considerable. Exploration expenditures in Canada are expected to reach \$1.4 billion in 2006. Domestic investment in new projects is forecasted to total \$16 billion by 2010.

In brief, Canada's minerals and metals industries create opportunities and, in turn, strengthen the Canadian economy. They play an important role in the quality of life of Canadians. Canada's well-being depends on the minerals and metals industries. However, these industries also face challenges such as strengthening investment (e.g., to offset declining mineral reserves), maintaining market access, remaining innovative, improving safety and security, reducing the regulatory burden, and addressing labour shortages (e.g., by expanding Aboriginal participation in mining).

Investment in Canada's exploration and mining industries is strengthened

Stronger investment in the minerals and metals industries will lead to greater economic growth and a high standard of living for Canadians. In turn, a higher standard of living, all things being equal, will improve the well-being of Canadians. A central role of NRCan, as with the government as a whole, is to improve the well-being of citizens.

During the next three years, NRCan will analyze and support improvements in the tax regime for mineral exploration and development to ensure that: (i) Canada remains the world's foremost destination for mineral exploration; and (ii) the rate of decline in base-metal reserves is moderated. The Department will also hold public information sessions on exploration tax incentives and other mining-related tax measures to encourage compliance with the rules and increase

the awareness of the advantages of investing in Canada's mining industry. In cooperation with Foreign Affairs and International Trade Canada and other departments, NRCan will promote domestic and international investment in Canada's mining industry by giving presentations at conferences, participating in investment seminars, and distributing publications.

Key performance indicators:

- Canada accounts for more than 35 percent of the equity raised for mineral exploration and mining in the world
- Canada accounts for more than 15 percent of global expenditures on mineral exploration

Market access for mineral and metal commodities (including recyclables) and related industries is promoted and, where necessary, protected; Canada's international prominence and investment in mining are secured

NRCan is committed to providing international leadership with respect to minerals and metals. International trade is critical to the growth and prosperity of Canada's minerals and metals industries. More than 80 percent of our minerals and metals are exported.

During the planning period, NRCan will continue to advance the interests of our minerals and metals industries by seeking to minimize or eliminate unnecessary restrictions on market access.

The Department will also propose that the United Nations Long-Range Transport of Air Pollutants Initiative, one of the central multilateral initiatives for protecting the environment, adopt a life-cycle approach to manage products, which through incineration, may yield air pollutants. A program will be introduced whereby producers of information technology equipment, purchased by the Government of Canada, will be responsible for the disposal of the equipment at the end of its useful life.

Key performance indicators:

- unnecessary restrictions on market access and investment are minimized or eliminated
- Canada influences intergovernmental organizations to develop a coordinated program to address the United Nations Commission on Sustainable Development's 2010 agenda for mining sustainability

The Extractive Industries Transparency Initiative supports improved governance in resource-rich countries through the full publication and verification of payments by oil, gas and mining companies and revenues received by government from oil, gas and mining companies. During the planning period, NRCan will advocate a broader approach to governance with respect to mining, including the capacity building of government institutions and communities. The Department will also work with multilateral organizations, such as the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, to develop a coordinated approach to address the United Nations Commission on Sustainable Development's agenda for mining sustainability in 2010.

Canadians benefit (i.e., higher quality of life) from R&D with respect to minerals, metals and value-added products

As with the rest of the economy, the minerals and metals industries have undergone significant technological change. Canadian researchers are among the world's leaders in developing mining and processing technologies, and advanced materials. More than ever, innovation is key to the minerals and metals industries' long-term profitability and competitiveness. At the same time, the industries must improve their environmental performance and safety and security, especially in underground mines.

Key performance indicators:

- labor and total factor productivity growth in Canada's minerals and metals industries are greater than the national average for all industries
- the emission of GHGs and pollutants by the minerals, metals, minerals and associated industries (e.g., transportation) are reduced
- the health and safety of workers in the mining industry are improved

During the planning period, NRCan will develop: technologies to treat effluents and solid wastes from mining, including the bacterial treatment of cyanide and ammonia; low impact methods to recover minerals such as hydrometallurgical alternatives to smelting and the bio-leaching of nonferrous metals; processes to improve the health and safety of miners, and to reduce energy consumption and mining's environmental footprint; more efficient processes and new high-performance materials for transportation vehicles; and technologies to improve the integrity and reliability of the materials used in pipelines, and to detect defects, impending failures and other problems in pipelines.

Public safety will be improved through the Canada-wide program to certify personnel who apply non-destructive methods (e.g., industrial radiography and ultrasonic technology) to analyze materials. During the planning period, NRCan will continue to organize the relocation of its Materials Technology Laboratory from the Booth Street Complex in Ottawa to McMaster University's Innovation Park in Hamilton, Ontario.

The safety and security of workers and the public throughout Canada are improved with respect to explosives

The Government of Canada is committed to improving the safety and security of Canadians. In support of this objective, NRCan will, under the *Explosives Act*, ensure that the safety and security of workers and the public is maximized through the effective regulation of the manufacture, importation, storage, sale and possession of explosives by means of a licensing and inspection program. Explosives regulations will be made available in plain language to facilitate understanding and compliance. Approximately 250 explosives, pyrotechnics and other energetic materials will be tested annually for authorization under the *Explosives Act*. Approximately 30 products will be tested annually for use in hazardous locations where flammable gases, vapours or liquids are present, for example, in oil and gas production and the aerospace industry. NRCan will also improve the safety and security of workers and the public from the threat of explosives through the application of science and technology. The results of modelling analysis and scientific research will be provided to clients to protect federal buildings and critical infrastructure against blasts.

Canadians are provided with information to improve decisions regarding minerals and metals; regulatory programs meet the Government of Canada's objectives

Relevant, accurate, timely and accessible statistics on minerals and metals provide a solid foundation for informed decisions by government, businesses, producers' associations and non-governmental organizations, as well as individual Canadians.

Statistics are also required to raise the awareness of Canadians of the importance of the contribution of the minerals and metals industries to the Canadian economy and the well-being of Canadians. NRCan is the only organization entrusted by Statistics Canada to collect data on its behalf.

During the planning period, NRCan will continue to:

(i) develop and maintain strong partnerships (e.g., with provincial and territorial governments); and (ii) disseminate a wide range of electronic and printed information and statistical analyses through numerous key publications, web sites, bulletins and fact sheets that highlight the importance of the minerals and metals industries, including production, value-added, employment, trade, investment, exploration, and Aboriginal participation in mining. In the coming fiscal year, NRCan will, in cooperation with the province of Nova Scotia, facilitate the development of the Donkin Coal Block in Cape Breton, Nova Scotia. Ad hoc on-site

Key performance indicators:

- Canadians receive relevant, accurate, timely, and accessible statistics, as defined in Statistics Canada's Quality Assurance Framework, on the minerals and metals industries
- the environmental assessments of mining projects under the *Canadian Environmental Assessment Act* are completed within agreed-upon time lines
- the regulatory process (e.g., the environmental assessment process, and regulatory permitting, licensing and authorization) are streamlined through a single-window approach
- the quantity of rough diamonds imported from and exported to non-participants in the Kimberley Process is nil

inspections of importers and exporters of rough diamonds will be undertaken to ensure that they comply with the *Export and Import of Rough Diamonds Act*.

As the responsible authority, the Department will ensure that environmental assessments are completed for the following projects: Kemess North gold and copper project (B.C.); Mount Klappan coal project (B.C.); Kutcho Creek polymetallic project (B.C.); Bloom Lake iron ore project (Quebec); LabMag iron ore project (Newfoundland and Labrador); Gahcho Kué diamond project (Northwest Territories); and High Lake zinc, copper and gold project (Nunavut). To improve the regulatory process affecting mining, the process for the listing of tailings impoundment areas will be streamlined under the *Metal Mining Effluent Regulations*.

Policies enhance the productivity and sustainability of the minerals and metals industries

NRCan is committed to enhancing the competitiveness of mining in Canada. To this end, the 13 provinces and territories, led by NRCan, will implement the Mines Ministers' Federal-Provincial-Territorial Framework for Action. The framework recognizes the importance of mining to the well-being of Canadians. Under the framework, three new joint projects will be initiated that advance its core topics of investment climate, innovation, and capacity and skills. In addition, a newly established Mines Deputy Ministers' Committee, promoted by NRCan, will provide strategic direction to strengthen intergovernmental action in support of mining.

Key performance indicators

- federal policies are developed in partnership with and supported by provincial and territorial mines ministers
- Aboriginals account for five percent of the labour force in Canada's mining industry
- Aboriginal awareness of the benefits and impacts of mining is enhanced

Aboriginal communities and the mining industry are developing a strong, mutually beneficial relationship. On one hand, the mining industry is becoming an important source of benefits for Aboriginal communities. For example, the Diavik diamond mine in the Northwest Territories purchased \$839 million of goods and services from northern Aboriginal businesses over the past two years. On the other hand, the young and growing population in Aboriginal communities within close proximity to existing and potential exploration sites and mines are offsetting the current and expected shortage of labour in mining. The mining industry is facing a shortage of up to 81 000 skilled workers over the next decade due to an aging work force.

To capitalize on existing and new opportunities presented by mining, NRCan will make presentations to Aboriginal organisations (e.g., the Council for the Advancement of Native Development Officers and the National Aboriginal Economic Development Board) and communities on the benefits offered by the mining industry. In cooperation with Foreign Affairs and International Trade Canada, Indian and Northern Affairs Canada and the Canadian International Development Agency, NRCan will promote leading practices with respect to Aboriginal-industry partnerships in Canada at key international events in order to transfer knowledge to Indigenous communities in other countries.

CORPORATE MANAGEMENT PROGRAM ACTIVITY¹ – NRCan is enabled by supportive corporate management functions

Planning Context

This program activity has to do with people, tools and structures. In short, it is about the support mechanisms required by the Department to deliver on its mandate, mission, and departmental priorities. A major challenge for this program activity is attracting and retaining highly qualified personnel. Currently the annual recruitment rate is 7.9 percent with an annual separation rate of 8.6. percent. It is estimated that one-quarter of the Department's work force will be eligible to retire by 2011. Moreover, the Department has to maintain its key physical infrastructure when about 77 percent of its real property – largely in the National Capital Region – is more than 35 years old. On the information management and information technology side, there are real challenges in remaining technologically current and meeting certain administrative and knowledge management requirements.



NRCan is supported by efficient and effective corporate management functions

Public service renewal is a major government-wide priority. The Clerk of the Privy Council is clear on this – the federal government must rethink the recruitment model, rethink the development model, rethink the jobs-for-life and one-size-fits-all model, and rethink the public service brand. NRCan's Human Resources Plan supports the Department's goals in having an integrated, professional, diverse, engaged and enabled workforce that is sustainable over the long-term. The Department will accomplish this through a targeted, pragmatic, and results-oriented approach. Specific deliverables over the planning period include: creating a pool of candidates to enter the EX cadre within three years; having in place collective staffing practices for in-demand/volume and/or common needs; and ensuring employees' work objectives are clearly linked to organizational objectives.

Moreover, the *Public Service Modernization Act* will require substantial efforts as the Act introduced sweeping changes to virtually every human resource areas. Successful implementation will require, among others, that legislative and policy requirements be completed within specific time frames and that essential services agreements are in place.

On the real property side, NRCan's Long Term Capital Plan (LTCP) will address unsafe and unsecure assets that pose risks to NRCan employees and other asset users while ensuring that legal obligations are met; replace essential assets where basic tests are not met; and maintain, identify and develop strategic investment projects (i.e., scientific and technical equipment; shared information technology infrastructure, and vehicle fleet).

¹ The resources for this program activity are distributed across all other program activities.

Information management (IM) and information technology (IT) are key enablers of program activity delivery. The focus in the coming year will be developing an IM/IT vision and strategy, and to ensure that the informatics systems used in support of our mission critical and other service support requirements continue to operate without interruption.

NRCan is committed to strengthening departmental management practices and uses the Management Accountability Framework (MAF) as a tool for advancing its management priorities. Over the planning period, the Department will continue efforts in addressing key issues identified in TBS MAF assessments with a view to improving our results.

Key performance indicators:

- actual departmental expenditures within -5 percent of planned spending (votes 1, 5 and 10)
- evidence of significant HR renewal initiatives implemented
- degree to which the Department and Treasury Board Secretariat have invested in NRCan's LTCP
- degree to which NRCan invests in recapitalization of real property versus 4 percent standard benchmark
- evidence of an enterprise approach to IM and IT planning and investing

NRCan is enabled to deliver value to Canadians supported by efficient and effective shared services

Shared services refers to the sharing and leveraging of resources, people and information to more efficiently meet business needs throughout the Department. The objective is to make service delivery functions more effective and efficient, while providing continued support to programs and services and better value to Canadians.

Through innovative approaches to service delivery, NRCan expects to achieve cumulative savings of more than \$3 million by the end of fiscal year 2007-08. Moreover, NRCan plans to increase the overall satisfaction of its clients by 5 percent, from 3.6 to 3.75 on a 5-point scale.

NRCan is provided with relevant and timely policy analysis and advice for decision-making on government priorities and departmental responsibilities

In order to make good decisions, Ministers and Deputy Ministers rely on policy analysis and advice that is based on the best information available, and they need it in a timely fashion. To this end, sound policy support takes on various forms including comprehensive economic analysis, on-going internal communication, and prompt, well-researched briefings and memos.

NRCan will carry out high-quality policy work to ensure that the Minister and Deputy Minister are well-informed and well-positioned to make the best decisions on matters of government priorities and departmental responsibilities.

On the regulatory side, the federal regulatory system for resource developments is a complex combination of requirements from a number of statutes. Canada has long been aware of the growing issues around its regulatory system, a process characterized as fragmented, complex, duplicative, and lacking transparency and consistency. These issues are growing in importance

now, as Canada is facing unprecedented growth in the resource sector, with as much as \$300 billion in new developments possible over the next decade.

A collaborative approach is essential to addressing an issue of this complexity, which involves a number of other departments and agencies. As a result, NRCan is leading an interdepartmental approach to develop short and longer term solutions to address the deficiencies of the current regulatory system for natural resource projects. Recommendations from this process, if implemented, would improve the overall performance of the system, with respect to its efficiency (e.g., by reducing overlap and duplication and enhancing timeliness and predictability) and with respect to its effectiveness (e.g., by increasing attention to the implementation of mitigative measures coming out of environmental assessment processes). Evidence of improvement could be measured through a proposed monitoring and tracking system for major resource projects going through the federal regulatory process.

NRCan is provided with timely and effective communications advice and support

A strategic communications approach ensures that NRCan priorities and the Department's contribution to Government of Canada objectives are well-communicated to Canadians and Parliamentarians. The Framework for Managing Communications at NRCan establishes a service model of co-accountability with department managers, strong central direction and coordination of communications, and guides the optimization of resources to deliver a full range of communications services that meets the needs of departmental clients. Over the planning period, the Department will establish the overall level of client satisfaction as a baseline against which to set targets for improvement.

NRCan is provided with independent performance assessments of departmental systems, programs, policies and initiatives

Audits and evaluations are used to improve the effectiveness and efficiency of departmental systems, programs, policies and initiatives. A new government-wide Policy on Internal Audit came into effect on April 1, 2006. Moreover, the TBS Evaluation Policy requires departments to evaluate programs, policies and initiatives, and to use a risk-based planning approach in identifying projects, to use structured and disciplined approaches in carrying out evaluations, and to ensure that the four key evaluation issues are addressed (i.e., relevance, success, cost-effectiveness, and design and delivery). Over the planning period, the Department commits to meeting the requirements of both policies.

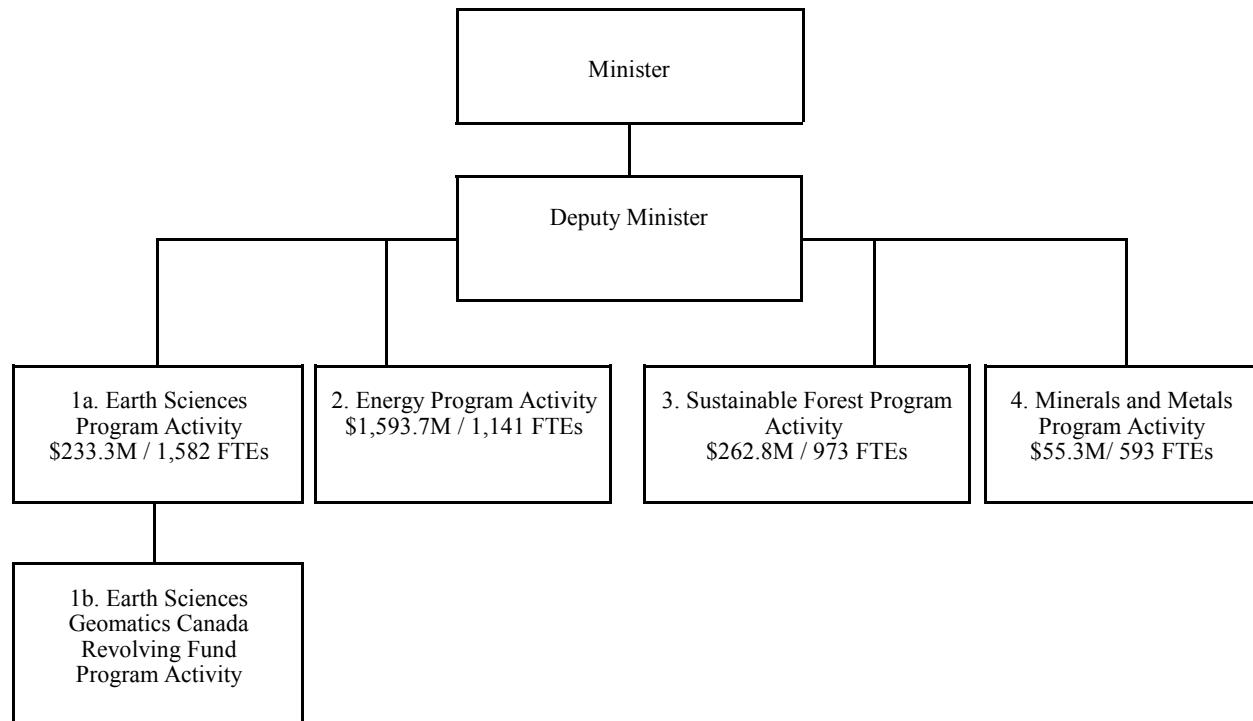
NRCan is provided with comprehensive science and technology analysis, policy, strategies and knowledge services

NRCan creates and uses scientific knowledge about natural resources to inform programmatic decisions and policy making so as to influence responsible resource-related outcomes, enhance global competitiveness, and increase the well-being of Canadians. The capacity to create

scientific knowledge represents the Department's greatest sustainable competitive advantage in the marketplace of natural resource ideas and innovation. NRCan will enhance its ability to apply its S&T in support of departmental priorities in a way that it is aligned with government-wide policies on S&T. To achieve this, strategic direction for S&T will rely on accurate and up-to-date information on S&T investments and achievements integrated into departmental planning and reporting framework. NRCan must not only create knowledge, but also preserve this most valuable asset, share it across all corners of the Department, integrate it across disciplines to address complex issues, leverage it to serve multiple purposes, and ultimately, mobilize it to achieve our goals and objectives. The key anticipated result for this function is that there is evidence of NRCan influence on internal and external S&T policies, procedures, practices and knowledge services.

Section III - Supplementary Information

Organizational Information *



* Information above is the 2007-08 Main Estimates – \$2,145.1M / 4,289 FTEs

Program Activities - Accountabilities:

- 1a. Earth Sciences – Assistant Deputy Minister, Earth Sciences Sector
- 1b. Earth Sciences – Geomatics Canada Revolving Fund – Assistant Deputy Minister, Earth Sciences Sector
2. Energy – Assistant Deputy Minister and Associate Assistant Deputy Minister, Energy Policy Sector; Assistant Deputy Minister, Energy Technology & Programs Sector
3. Sustainable Forest – Assistant Deputy Minister, Canadian Forest Service
4. Minerals and Metals – Assistant Deputy Minister, Minerals and Metals Sector

1. Planned Spending and Full Time Equivalents

(\$ millions)	Forecast Spending 2006-07	Planned Spending 2007-08	Planned Spending 2008-09	Planned Spending 2009-10
Budgetary				
Earth Sciences	233.0	236.3	229.3	207.6
Energy	994.6	1,604.5	1,346.8	1,399.2
Forest	154.1	265.0	125.0	121.9
Minerals and Metals	65.9	62.8	62.1	61.5
Earth Sciences - Geomatics Canada Revolving Fund	0.0	0.0	0.0	0.0
Budgetary Main Estimates (gross)	1,447.6	2,168.6	1,763.2	1,790.2
Less: Respendable Revenue	(21.5)	(23.5)	(21.5)	(21.5)
Total Main Estimates	1,426.1	2,145.1	1,741.7	1,768.7
Adjustments:				
2006-07 Supplementary Estimates (A) *	133.2	0.0	0.0	0.0
2006-07 Supplementary Estimates (B) **	292.2	0.0	0.0	0.0
Other Adjustments ***	0.0	8.4	145.8	15.7
Total Adjustments	425.4	8.4	145.8	15.7
Total Planned Spending	1,851.5	2,153.5	1,887.5	1,784.4
Less: Non-respendable revenue	(833.6)	(1,041.6)	(983.6)	(1,062.8)
Plus: Cost of services received without charge	38.2	36.6	35.8	36.0
Net Cost of Program	1,056.1	1,148.5	939.7	757.6
Full Time Equivalents (FTEs)	4,456	4,289	4,127	4,117

* Major items included in the 2006-07 Supplementary Estimates (A): \$65.9M for activities related to the safe decommissioning of shutdown buildings and contaminated lands in order to meet federal regulatory requirements, and for the long-term strategy needed for the disposal of nuclear wastes (Nuclear Legacy Liabilities Program); \$50.1M for existing climate change programs pending the finalization of a new environmental agenda; \$1.1M in support of the clean-up of the decommissioned Gunnar and Lorado uranium mines; (\$5.6M) for 2006 Expenditure Restraint; and (\$3.4M) for procurement savings.

** Major items included in the 2006-07 Supplementary Estimates (B): \$171.6M for Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund; \$109.8M for Newfoundland Fiscal Equalization Offset Payments; \$11.2M for Payments to the Nova Scotia Offshore Revenue Accounts; \$30M in support of the federal response to the Mountain Pine Beetle infestation in British Columbia; \$7.5M grants for existing climate change programs pending the finalization of a new environmental agenda; and \$2.9M in support of the Forest Industry Long-Term Competitiveness Strategy.

*** Includes: in 2007-08: \$5.4M for the Forest Industry Long-Term Competitiveness Strategy; \$2.2M for the announced relocation of the Materials Technology Laboratory to Hamilton, Ontario; \$0.5M for Internal Audit; and \$0.3M for Nunavik Inuit Land Claims Agreement / in 2008-09: \$81.9M for Mountain Pine Beetle infestation; \$57.9M for the Forest Industry Long-Term Competitiveness Strategy; \$4M for the announced relocation of the Materials Technology Laboratory to Hamilton, Ontario; and \$2M for Biotechnology / in 2009-10: \$13.7M for the announced relocation of the Materials Technology Laboratory to Hamilton, Ontario; and \$2M for Biotechnology.

2. Planned Spending by Program Activity for 2007-08

(\$ millions)	Program Activity					Total
	Earth Sciences*	Energy*	Forest*	Minerals and Metals*	Earth Sciences - Geomatics Canada Revolving Fund	
Operating	223.9	376.4	124.8	62.1	3.6	790.8
Capital	0.8	0.7	0.9	0.3	0.0	2.7
Transfer Payments	11.6	1,227.4	139.2	0.5	0.0	1,378.7
Gross	236.3	1,604.5	264.9	62.9	3.6	2,172.2
Less Respendable Revenue	(3.0)	(10.8)	(2.1)	(7.6)	(3.6)	(27.1)
Total Main Estimates	233.3	1,593.7	262.8	55.3	0.0	2,145.1
Plus: Adjustments	0.5	0.2	5.5	2.2	0.0	8.4
Total Planned Spending	233.8	1,593.9	268.3	57.5	0.0	2,153.5

* Program activity contributes to the achievement of the following Government of Canada outcome areas: strong economic growth; an innovative and knowledge-based economy; a clean and healthy environment; a fair and secure marketplace; a strong and mutually beneficial North American partnership; and a prosperous Canada through global commerce.

3. Voted and Statutory Items Listed in Main Estimates

(Millions of \$)

Vote or Statutory items	Current Main Estimates 2007-08	Previous Main Estimates 2006-07
1 Operating expenditures	709.3	551.3
5 Capital expenditures	2.7	3.7
10 Grants and contributions	328.1	256.1
(S) Minister of Natural Resources - Salary and Motor Car Allowance	0.1	0.1
(S) Contributions to Employee Benefit Plans	54.4	56.3
(S) Canada-Nova Scotia Development Fund	1.9	1.9
(S) Canada-Newfoundland Development Fund	0.0	0.5
(S) Canada-Newfoundland Offshore Petroleum Board	5.0	4.2
(S) Canada-Nova Scotia Offshore Petroleum Board	2.9	2.9
(S) Payments to the Nova Scotia Offshore Revenue Account	450.0	200.0
(S) Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund	590.7	349.1
(S) Earth Sciences-Geomatics Canada Revolving Fund	0.0	0.0
Total NRCan	2,145.1	1,426.1

4. Net Cost of Program for 2007-08

(\$ millions)	Total NRCan
Total Planned Spending (Total Main Estimates plus adjustments)	2,153.5
Plus: Services Received without Charge	
• Accommodation provided by Public Works and Government Services Canada (PWGSC)	14.2
• Contributions covering employers' share of employees' insurance premiums and expenditures paid by TBS (excluding revolving funds)	20.6
• Worker's compensation coverage provided by Social Development Canada	0.3
• Salary and associated expenditures of legal services provided by Justice Canada	1.5
Total Services Received without Charge	36.6
Less: Non-responsible Revenue	(1,041.6)
Net Cost of Program	1,148.5

5. Summary of Major Capital Spending by Program Activity

(\$ millions)

Program Activity	Forecast Spending 2006-07	Planned Spending 2007-08	Planned Spending 2008-09	Planned Spending 2009-10
Earth Sciences	1.1	0.8	0.8	0.8
Energy	1.0	0.7	0.7	0.7
Forest	1.1	0.9	0.9	0.9
Minerals and Metals	0.5	0.3	0.3	0.3
Earth Sciences - Geomatics Canada Revolving Fund	0.0	0.0	0.0	0.0
Total Main Estimates	3.7	2.7	2.7	2.7
Adjustments	0.0	0.0	0.0	0.0
Total Planned Spending	3.7	2.7	2.7	2.7

6. Loans, Investments, and Advances (Non-budgetary)

(\$ millions)	Forecast Balance April 1 st , 2007	Receipts and other credits	Payments and other charges	Forecast balance March 31 st , 2008
Atomic Energy of Canada Ltd.				
- Heavy Water Inventory	1.5	(1.0)	0.0	0.5
Hibernia Development Project	18.4	(9.2)	0.0	9.2
Nordion International Inc.	74.0	(4.0)	0.0	70.0
Total	93.9	(14.2)	0.0	79.7

7. Source of Respendable and Non-Respendable Revenues (Excludes the Earth Sciences-Geomatics Canada Revolving Fund)

(\$ millions)	Forecast Revenue 2006-07	Planned Revenue 2007-08	Planned Revenue 2008-09	Planned Revenue 2009-10
Respendable Revenue				
Earth Sciences	3.0	3.0	3.0	3.0
Energy	8.8	10.8	8.9	8.9
Forest	2.1	2.1	2.0	2.0
Minerals and Metals	7.6	7.6	7.6	7.6
Total Respendable Revenue	21.5	23.5	21.5	21.5
Non-Respendable Revenue *				
Earth Sciences	0.3	0.3	0.3	0.3
Energy	833.1	1,041.1	983.1	1,062.3
Forest	0.0	0.0	0.0	0.0
Minerals and Metals	0.2	0.2	0.2	0.2
Total Non-Respendable Revenue	833.6	1,041.6	983.6	1,062.8
Total Respendable and Non-Respendable Revenues	855.1	1,065.1	1,005.1	1,084.3

* Non-respendable revenues in the current year (2006-07) reflect most recent receipts and updated forecasts.

8. Geomatics Canada Revolving Fund

(\$ millions)	Forecast Revenue 2006-07	Planned Revenue 2007-08	Planned Revenue 2008-09	Planned Revenue 2009-10
Respendable Revenues:				
Products	12.4	0.9	0.9	0.9
Service	3.7	2.6	1.0	1.0
Consulting	1.6	0.1	0.0	0.0
Total Respendable Revenues	17.7	3.6	1.9	1.9
Operating Expenses:				
Cost of sales	3.5	0.3	0.3	0.3
Salaries and employee benefits	5.9	1.6	1.2	1.2
Depreciation	0.3	0.0	0.0	0.0
Repairs and Maintenance	0.7	0.0	0.0	0.0
Administrative and support services	2.3	0.2	0.1	0.1
Utilities, materials, and supplies	0.3	0.0	0.0	0.0
Rental	0.3	0.1	0.0	0.0
Interest	0.0	0.0	0.0	0.0
Transportation and communication	0.3	0.1	0.1	0.1
Professional and special service	3.3	1.0	0.1	0.1
Total Operating Expenses	16.9	3.3	1.8	1.8
Operating Surplus (Deficit)	0.8	0.3	0.1	0.1
Non cash item: Depreciation	0.3	0.0	0.0	0.0
Change in working capital	(1.1)	(0.4)	(0.1)	(0.1)
Other items	0.2	0.1	0.0	0.0
Investing activities: Capital acquisitions	(0.2)	0.0	0.0	0.0
Surplus (Deficit)	0.0	0.0	0.0	0.0

9. User Fees

Name of User Fee	Fee Type	Fee Setting Authority	Reason for Fee Introduction or Amendment	Effective Date of Planned Change to Take Effect	Planned Consultation & Review Process
Explosives licence, permit and certificate fees	Regulatory	<i>Explosives Act</i>	Distribute burden of cost recovery more fairly. Update fee schedule.	Spring 2008	All affected stakeholders to be consulted through web postings, mailings and meetings.

10. Summary of Transfer Payments

(\$ millions)	Forecast Spending 2006-07	Planned Spending 2007-08	Planned Spending 2008-09	Planned Spending 2009-10
Grants:				
Earth Sciences	0.3	0.3	0.3	0.3
Energy	10.5	38.2	0.6	0.6
Forest	0.8	0.8	0.8	0.8
Minerals and Metals	0.1	0.2	0.2	0.2
Total Voted Grants	11.7	39.5	1.9	1.9
Contributions:				
Earth Sciences	7.6	11.3	7.2	5.8
Energy	202.7	138.6	52.2	50.1
Forest	33.7	138.4	15.7	14.0
Minerals and Metals	0.4	0.3	0.2	0.2
Total Voted Contributions	244.4	288.6	75.2	70.1
Total Vote 10 Grants and Contributions	256.1	328.1	77.1	72.0
Statutory Contributions	558.6	1,050.6	991.7	1,070.9
Total Grants and Contributions	814.7	1,378.7	1,068.8	1,142.0
Plus: Adjustments:				
2006-07 Supplementary Estimates (A) *	21.7	0.0	0.0	0.0
2006-07 Supplementary Estimates (B) **	304.4	0.0	0.0	0.0
Other Adjustments ***	0.0	5.5	121.3	0.0
Total Planned Grants and Contributions	1,336.1	1,384.2	1,190.1	1,142.9

* Major items included in the 2006-07 Supplementary Estimates (A): \$23.2M for existing climate change programs pending the finalization of a new environmental agenda; \$1.1M in support of the clean-up of the decommissioned Gunnar and Lorado uranium mines; and (\$2.6M) for 2006 Expenditure Restraint.

** Major items included in the 2006-07 Supplementary Estimates (B): \$171.6M for Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund; \$109.8M for Newfoundland Fiscal Equalization Offset Payments; \$11.2M for Payments to the Nova Scotia Offshore Revenue Accounts; \$27.8M in support of the federal response to the Mountain Pine Beetle infestation in British Columbia; \$7.5M grants for existing climate change programs pending the finalization of a new environmental agenda; and \$1M in support of the Forest Industry Long-Term Competitiveness Strategy.

*** Includes: in 2007-08: \$5.5M for the Forest Industry Long-Term Competitiveness Strategy; / in 2008-09: \$72.3M for Mountain Pine Beetle infestation; and \$49M for the Forest Industry Long-Term Competitiveness Strategy.

11. Listing of Transfer Payment Programs Exceeding \$5 million/year

2007-08

1. GeoConnections Implementation Fund Program
2. In support of energy efficiency and alternative energy programs
3. Payments to the Nova Scotia Offshore Revenue Account
4. Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund
5. Contribution to the Canada-Newfoundland Offshore Petroleum Board
6. Wind Power Production Incentive Contribution Program
7. Contributions in support of the Technology and Innovation Initiative
8. Contribution in support of the ecoENERGY Renewable Power Initiative
9. Contribution in support of the ecoENERGY Renewable Heat Initiative
10. Contribution in support of the ecoENERGY Technology Initiative
11. Grant and Contribution in support of the ecoENERGY Retrofit Initiative
12. Federal Response to the Mountain Pine Beetle Infestation
13. Forest Industry Long Term Competitiveness Strategy - Expanding Market Opportunities
14. Forest Industry Long Term Competitiveness Strategy - Promoting Forest Innovation and Investment

2008-09

1. GeoConnections Implementation Fund Program
2. In support of energy efficiency and alternative energy programs
3. Payments to the Nova Scotia Offshore Revenue Account
4. Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund
5. Contribution to the Canada-Newfoundland Offshore Petroleum Board
6. Wind Power Production Incentive Contribution Program

2009-10

1. GeoConnections Implementation Fund Program
2. In support of energy efficiency and alternative energy programs
3. Payments to the Nova Scotia Offshore Revenue Account
4. Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund
5. Contribution to the Canada-Newfoundland Offshore Petroleum Board
6. Wind Power Production Incentive Contribution Program

Further information on these projects can be found at:

http://www.tbs-sct.gc.ca/est-pre/20072008/p3a_e.asp.

12. Foundations (Conditional Grants)

1. Sustainable Development Technology Canada
2. Green Municipal Fund

Further information on these projects can be found at http://www.tbs-sct.gc.ca/est-pre/20072008/p3a_e.asp.

13. Horizontal Initiative – Clean Air Agenda

In 2006, the Government of Canada introduced the Clean Air Agenda, a key policy initiative to reduce air pollution and address climate change. The core element of the Government's approach, *Canada's Clean Air Act*, was introduced in Parliament on October 19, 2006. A series of program measures, in support of the Act, were subsequently announced in the area of biofuels and clean energy.

Air pollution and climate change are complex issues that touch on the various areas of interest of NRCan: energy, earth sciences, forestry, and minerals and metals. As a result, NRCan has been tasked to implement a series of measures under the Clean Air Agenda. Under the Act, regulations for energy-efficiency levels in Canada will be toughened, and the *Energy Efficiency Act* will be amended. NRCan will work with Environment Canada, who has the lead, on the development of the regulations for industrial air emissions. As well, NRCan will use its science and program expertise to design and implement the suite of program measures in the areas of energy efficiency, renewable energy, and clean energy technologies. Successful implementation of these measures will be ensured through effective intra-departmental coordination.

In addition to NRCan, the Clean Air Agenda touches on issues related to a large number of other departments and agencies. Successful implementation of the agenda will require cooperation and collaboration between partnering departments. NRCan will participate actively in the inter-departmental process being set up to manage and report on the Clean Air Agenda.

Supplementary information on this horizontal initiative can be found at:

http://www.tbs-sct.gc.ca/rma/eppi-ibdrp/hrdb-rhbd/profil_e.asp.

14. Sustainable Development Strategy

NRCan's Sustainable Development Strategy (SDS), *Achieving Results*, was tabled in Parliament on December 13, 2006. *Achieving Results* is the Department's fourth three-year strategy and the next step in the evolution of NRCan's approach to sustainable development. The SDS is a key tool for addressing the challenges and taking advantage of the opportunities related to sustainable development through the Department's policies, programs, S&T, legislation, regulation and operations. It is informed by a process of stakeholder engagement undertaken with interest groups and individuals from across the country.

The strategy's goals are to: enable Canada's natural resource sectors to contribute to a competitive economy and advance positive social and environmental outcomes; advance Canada's position as a world leader in sustainable resource development and use; and to integrate economic, environmental and social considerations into departmental decision-making and to continuously improve operations. More information on NRCan's SDS can be found at <http://www.nrcan.gc.ca/sd-dd>.

15. Planned Internal Audits and Evaluations

NRCan recognizes the importance of conducting audits, evaluations, special studies and concurrent reviews in areas of significance or risk, according to established government standards. The listing of departmental planned internal audits and evaluations can be found at http://www2cm.nrcan.gc.ca/NRCan/index_e.aspx.