Natural Resources Canada

2004-05
Estimates

A Report on Plans and Priorities

Approved

R. John Efford
Minister of Natural Resources

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I Minister's Message

R. John Efford
Minister of Natural Resources

I am pleased to present the Report on Plans and Priorities, my first as Minister of Natural Resources Canada (NRCan).

As Canada moves forward, NRCan's contributions to the Government of Canada's priorities, as set out by the Prime Minister, will assume even greater importance. We will continue to build on Canada's natural resources sectors, their products and new technologies, to strengthen the social foundations of Canadian life and ensure Canada's place in the world.

We will continue to help build a 21st century economy, promoting economic growth and global development to ensure Canada's reputation as a world leader in the wise use of natural resources. This will include expanding access to international markets for resource-based products, knowledge, technologies and services.

Canadians look to the Government of Canada to balance the economic development of our natural resources with environmental and social concerns. To this end, we will further contribute to the goal of sustainable development by continuing our scientific research and developing leading-edge technologies.

This Report on Plans and Priorities explains how NRCan will continue to face the challenges of our mandate. One of those challenges is to improve Canada's ability to report its progress on sustainable forest management in a comprehensive, timely and user-friendly way. Another is to improve sharing of knowledge and scientific data, such as geospatial information, across multiple channels.

We also remain strongly committed to Canada's public safety and security. No role is more fundamental to government than the protection of its citizens. We work to monitor the impacts of natural hazards such as earthquakes, floods and forest fires, and we oversee the legitimate use of explosives. We also help protect critical energy infrastructures, and we participate in the Chemical, Biological, Radiological and Nuclear Research and Technology Initiative.

We will continue to manage this department and its agencies efficiently and effectively, and demonstrate that we are fully accountable to Canadians for our use of public funds.

We will build upon our partnerships with our stakeholders — provinces and territories, municipalities, northerners, Aboriginal people, non-governmental organizations, private sector partners and educational institutions. Through our leadership and expertise, we will continue to win markets and allies across the country and around the world.

As Minister of NRCan, I am confident that the diversity and talent of our workforce provide the strength we need to face our challenges and ensure the responsible use of our natural resources. Together, we will help protect our environment, create opportunities and encourage innovative approaches to balancing our economic, social and environmental objectives. Above all, we will respond to the changing needs of Canadians, helping to build the Canada we want, for ourselves and for future generations.

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R. John Efford

Management Representation

I submit, for tabling in Parliament, the 2004-05 Report on Plans and Priorities for Natural Resources Canada.

This report has been prepared based on the reporting principles and disclosure requirements contained in the *Guide to the preparation of the 2004-2005 Report on Plans and Priorities*:

- It accurately portrays the Department's plans and priorities.
- The planned spending information in this document is consistent with the directions provided in the Minister of Finance's Budget and by Treasury Board Secretariat.
- It is comprehensive and accurate.
- It is based on sound underlying departmental information and management systems.

The reporting structure on which this document is based has been approved by Treasury Board Ministers and is the basis for accountability for the results achieved with the resources and authorities provided.

Name: _____
George Anderson

Title: Deputy Minister

Date: _____

II Raison d'être and Planning Overview

Quality of life through sustainable resource development

Planning Overview

NRCan has a solid foundation for supporting the Government of Canada's overall priorities for the coming decades: building a modern economy, securing the country's social foundations, and ensuring Canada's place in the world. The planning context for 2004-05 is shaped both by these federal priorities and by recent progress that NRCan has achieved on key issues to ensure that Canada's natural resources will continue to support the economic well-being and quality of life of Canadians, both now and for the future.

The coming year will present exciting new challenges for NRCan, as well as opportunities to build on our recent accomplishments. The Department's key priorities for 2004-05 are:

addressing climate change – helping Canadians take action to reduce greenhouse gas (GHG) emissions and adapt to the effects of climate change;

building sustainable development capacity – helping Canadian resource industries, communities and individuals make better decisions that advance sustainable development, as well as improving NRCan's ability to contribute to sustainable development; and

providing global leadership on sustainable development – ensuring that Canada is globally recognized as a responsible steward of our natural resources and as a leader in advancing sustainable development internationally.

NRCan's vision for a sustainable future

Canada's natural resource sectors will forge new thinking, build alliances and invest in innovation, making significant contributions to sustainable development within Canada and around the globe. As a nation, we will see advanced levels of corporate and consumer knowledge, growing commitment to social and environmental responsibility, and adoption of life-cycle approaches to resource development and use. Canadians will have the knowledge and ability to seize opportunities, address challenges, compete successfully in the global marketplace and generate continued social and economic benefits.

Canada will be recognized as a world-leading provider of innovative products, practices and technologies, and respected worldwide for stewardship of our natural resources. Natural Resources Canada's leadership on sustainable development policy and practices, investment in research and development, and commitment to knowledge, capacity building, and science and technology will play a significant role in turning this vision into reality. We will work with stakeholders to ensure prosperity in Canada's cities, rural areas and Aboriginal communities, and with our global partners to advance sustainable development around the world – raising quality of life at home and abroad.

These priorities evolved during 2003-04 through the work carried out in the lead-up consultations and development of the Department's Sustainable Development Strategy (SDS) – *Moving Forward*, with a focus on strengthening the foundation for sustainable development in Canada and shaping a long-term vision. The consultations helped the Department to identify the key results that

must be achieved in order to realize the emerging vision of a sustainable future. Subsequently, these key results became the organizing focal points for the strategy. NRCan's key priorities for 2004 are aligned with the key results established in *Moving Forward*. They are outlined below, illustrated by descriptions of recent achievements on key NRCan issues.

Addressing Climate Change

Implementing Canada's commitment to meet the Kyoto targets on climate change represents a major challenge for the Government of Canada and all Canadians. There is a need to further elaborate the elements of Canada's climate change plan and be aware of the challenge of this initiative vis-à-vis the development of an energy policy. We must also assess progress in reducing GHG emissions to date. The Government must ensure that, in all efforts to reduce GHG emissions and reduce the impact of climate change, federal resources are employed to maximum benefit. With the majority of GHG emissions in Canada attributable to energy production and consumption, this requires a robust energy policy.

Weyburn CO_2 Monitoring and Storage Project

The development of technologies for the capture and storage of carbon dioxide (CO_2), part of the government's comprehensive efforts to achieve Kyoto emission reduction targets, is making progress with the International Energy Agency Weyburn CO_2 Monitoring and Storage Project in Saskatchewan. NRCan is one of six international government sponsors supporting the first phase of this massive project which intends to demonstrate that combining CO_2 storage with enhanced oil recovery is both economically viable and environmentally responsible. The technology and understanding developed in this project will be of enormous significance for establishing geologic sequestration as a viable option for GHG emissions control worldwide. Understanding CO_2 capture and geological storage is also an important aspect of maintaining Canada's fossil-fuel energy options while we take action on climate change.

A key task for the Department during 2004-05 will be to work towards the negotiation of covenants on targets to reduce emissions of large final emitters in key industrial sectors. If left unaddressed, these emissions would be expected to form about half of Canada's total GHG emissions by 2010. NRCan is pursuing this approach with firms in upstream and downstream oil and gas production, electricity generation, and mining and manufacturing. The covenant approach will later be supported by backstop legislation, and a flexible framework for industry to achieve its goals, including domestic emissions trading, access to Canadian offsets, and access to international permits and credits.

To achieve emissions reduction in other sectors, such as the residential, commercial, institutional and transportation sectors, the Government of Canada has proposed a series of targeted measures, mostly in the form of information and incentive programs. As the department responsible for energy policy, NRCan remains at the centre of these federal efforts on climate change. Existing departmental activities are being expanded significantly. Energy efficiency in buildings and transportation represents a key strategic focus. NRCan will expand the breadth of information available to Canadians, to increase public awareness of climate change and uptake of eco-efficiency measures. Another strategic focus is to achieve emissions reduction by encouraging no- and low-carbon energy sources. Several important initiatives are being implemented to encourage the production and use of renewable and alternative energy sources such as wind power and ethanol.

With its technical expertise, NRCan has a significant role in advancing research and development on renewable and clean energy sources, and in advancing the development and demonstration of new technologies. Significant investments are being made towards the development of technologies that will help reduce emissions over the longer term and create new economic opportunities. The Department is also investing in research to further our knowledge of carbon storage in the environment and innovative approaches to enhance carbon sequestration (see the Weyburn story).

Another crucial task for the Government of Canada will be to expand the assessment of vulnerabilities to climate change impacts. NRCan has a coordinating role in advancing Canada's preparedness in this area, and a specific responsibility to enhance disaster-response preparedness.

Building Sustainable Development Capacity

Sustainable development empowers Canadians to seize new opportunities to improve their quality of life. Building Canada's capacity for sustainable development involves improving knowledge and ability at all levels of Canadian society. Improving the knowledge base on Canada's landmass and natural resources, developing new tools and applications for monitoring and managing our resources, supporting advanced technology development, enhancing the capacity of communities to engage in sustainable development, and encouraging consumer choices that support sustainable development – all of these NRCan activities contribute to building Canada's capacity for sustainable development. NRCan also has a role to play in shaping the regulatory environment that governs resource development and use in Canada, fostering dialogue and contributing to the evolution of government policy that supports sustainable development.

NRCan's Role

NRCan has the federal responsibility for ensuring the sustainable development of Canada's energy resources, minerals and metals, and forests, and for providing the geographical and geological knowledge base that supports decisions about Canada's land-based and offshore resources. NRCan fulfills this mandate through its leadership on policy, science and technology in Canada and internationally, and through the delivery of programs and services to Canadians across the country. As the lead institution within the federal government on energy supply and use, forestry, minerals and metals, and earth sciences, the Department acts in close cooperation with other levels of government, the private sector, non-government organizations, and Aboriginal groups.

Supporting innovation and investments in the future of Canada's natural resources – Innovation is the driver of the global economy in the 21st century. The energy and natural resource sectors are no exception: competitiveness in global markets will depend on improvements in the exploration, extraction and processing activities and on the commercialization of new technologies. NRCan will continue supporting efforts to strengthen the business and investment climate for natural resource and allied industries. The Department will also work with private and public sector partners to ensure that Canadians employed in natural resource industries have the necessary skills, and to facilitate the entry of new skilled workers, particularly Aboriginal Canadians, into these industries.

Improving governance practices – The Government of Canada must find new ways of managing challenges and realizing common goals in the natural resource sectors. This means developing a more transparent way of doing business with all types of organizations, strengthening public-

private partnerships, and building capacity to manage information and to engage in meaningful dialogue. In 2003, NRCan established the Office of Chief Scientist to address the challenges and opportunities for effective S&T management within the Department and across Government. In 2004-05, the Office will provide leadership in the development of an S&T vision, mission and effective governance structure for NRCan, improvement of departmental S&T information to demonstrate results, and the integration of S&T across departments with a strong focus on priorities.

Providing Global Leadership on Sustainable Development

Canada is linked to the other countries of the world economically, socially, and environmentally; therefore, carrying out NRCan's mandate requires looking beyond Canada's borders. Canada has a stake in the sustainable development of the world, as well as a responsibility as a steward of significant natural resources. NRCan plays a role in the development of international standards, policies and agreements through its participation in sector-specific international organizations and fora, and engages in initiatives to share best practices and approaches supporting the sustainable development of natural resources internationally. Helping to establish knowledge and capacity to support international sustainable development also presents opportunities to demonstrate Canada's stewardship and innovation excellence.

NRCan is dedicated to maintaining or improving international market access for the products of Canada's natural resource sectors. The Department works with

Follow-up to the National Roundtable on Innovation and Skills

Important progress has been made following up on the October 2002 Roundtable. Budget 2003 included:

- tax measures which will strengthen resource industry competitiveness;
- measures to strengthen innovation and research in Canada;
- establishment of the Canadian Forest Innovation Council to maximize this industry's innovation capacity;
- set up of an Energy Technology Working Group to review R&D across Canada and to develop options for enhanced collaboration among stakeholders; and
- renewal of funding for the First Nations Forestry Program.

Initiatives flowing from the Innovation Roundtable will address the unique skills and learning challenges of the natural resource sectors, help bridge the research and commercialization gap in the natural resource industries, and contribute to the transformation of the resource and allied industries by encouraging the development of value-added products for domestic and export markets.

As well, there has been encouraging progress on Smart Regulation, with recommendations for a modernized regulatory framework expected in June 2004. Efforts are also under way to improve regulatory efficiency concerning Atlantic offshore oil and gas development, with a progress report due in March 2004.

World Forestry Congress

Canada hosted the XIIth World Forestry Congress (WFC) in Quebec City in September 2003. The Congress was a signal opportunity to show the world Canada's commitment to sustainable forest management and our innovative approaches to forest stewardship. Staged under the aegis of the Food and Agriculture Organization of the United Nations, this was the first time since its inception in 1926 that a WFC was held in Canada. The Congress was hosted by NRCan and the *Ministère des Ressources naturelles, de la Faune et des Parcs du Québec*. The highly successful event attracted more than 4000 participants from 144 countries in five continents. All forest stakeholders were represented including government, industry leaders, forest practitioners, woodlot owners, environmentalists, indigenous peoples, and internationally renowned academics. The Congress included a substantial youth contingent from Canada and abroad as well as delegates from developing countries.

industry to address international trade barriers by improving and demonstrating sustainable development in Canada. This work goes hand in hand with contributing to establishing a more equitable global community.

Five Strategic Outcomes

NRCan's 2004 SDS – *Moving Forward*, which has just been tabled in Parliament, is grounded in the Department's Planning, Reporting and Accountability Structure (PRAS). The PRAS' five strategic outcomes, and their associated objectives, provide the foundation for the strategy, making sustainable development mainstream and inclusive, and aligning its key results with the business planning process. This approach positions the SDS as a key strategic document essential to the fulfillment of NRCan's mandate.

NRCan will play a significant role in the transformation of Canada's natural resource sectors in the 21st century through its leadership on sustainable development policy and practices. By focussing on the priorities outlined above, NRCan intends to make progress on the implementation of its five strategic outcomes, providing Canadians with:

1. information to make balanced decisions regarding natural resources;
2. sustainable economic, social and environmental benefits derived from natural resources for present and future generations;
3. strategies that reduce the environmental impacts of natural resources development and use;
4. enhanced safety and security;
5. a department that is efficiently and effectively managed.

This document presents the Department's plans and priorities for 2004-05 organized by these five strategic outcomes.

III Plans and Priorities by Strategic Outcome

Introduction

Section III summarizes NRCan's key commitments by the Department's strategic outcomes and departmental priorities. As a result of consultation with stakeholders on the production of its 2004 Sustainable Development Strategy, the Department has identified the need to revisit its performance indicators with the new suite being published in RPP 05-06. Information about commitments not appearing in this report can be found on the Department's main web site at http://www.nrcan.gc.ca or at the various web sites on pages xviii-xx.

The following table provides a summary of NRCan's planned expenditures for 2004-05 by strategic outcome and departmental priorities (all ongoing), and major initiatives/programs. This should help the Department provide greater disclosure along with evidence of value for money to Canadian taxpayers.

Major Initiatives/Programs (consolidated)	Strategic Outcomes / Priorities					Total Planned Expenditures
	Information Dissemination and Consensus Building/ Priorities 1,2,3	Economic, Social and Environmental Benefits/ Priorities 1,2,3	Environmental Protection and Mitigation/ Priority 1	Safety and Security of Canadians/ Priority 4	Sound Departmental Management/ Priority 4	
Connecting Canadians to geospatial information	26.3	12.0				38.3
Creating an Aboriginal property rights infrastructure		12.4				12.4
Forest sector programs, investments and special initiatives*	25.5	38.3	6.0			69.8
Ensuring a clean and safe environment for Canadians*		3.2	29.3			32.5
Policy research and development for the sustainable development of natural resources*	51.9	35.7	38.5	6.9		133.0
Leveraging investments in climate change*			16.8			16.8
Energy efficiency, alternative and renewable energy - market transformation and incentives*	4.7		233.0			237.7

Major Initiatives/Programs (consolidated)	Strategic Outcomes / Priorities					Total Planned Expenditures
	Information Dissemination and Consensus Building/ Priorities 1,2,3	Economic, Social and Environmental Benefits/ Priorities 1,2,3	Environmental Protection and Mitigation/ Priority 1	Safety and Security of Canadians/ Priority 4	Sound Departmental Management/ Priority 4	
Meeting Canadians' security and safety needs		0.5	0.2	17.0		17.7
Providing science, technology and innovation support for the sustainable development of Canada's natural resources*	66.7	58.5	150.8	2.7		278.7
Offshore oil industry development, support, and regulation		178.0		6.1		184.1
Departmental services	9.7	9.5	12.5	3.1	59.6	94.4
Other items	9.0	5.2	1.6	2.3		18.1
Less respendable revenue	(12.1)	(13.3)	(9.0)	(6.1)	(0.1)	(40.6)
Total 2004-05 Planned Expenditures	**181.7**	**340.0**	**479.7**	**32.0**	**59.5**	**1,092.9**

* Activities including and supporting climate change funding.

Departmental Priorities:
1. addressing climate change
2. building sustainable development capacity
3. providing global leadership on sustainable development
4. other

Strategic Outcome #1 - To provide Canadians with information to make balanced decisions regarding natural resources.

Planned Expenditures
2004-05: $181.7M
2005-06: $156.7M
2006-07: $156.2M

Short to medium-term objectives	Performance Indicators*
Easily accessible and integrated knowledge on the state of Canada's landmass and natural resources, and the economic, environmental, and social dimensions of their use.	• User satisfaction with relevance, accessibility and quality of information. • Public awareness of the importance and relevance of the natural resources sector, its issues, and NRCan's S&T. • Adoption of NRCan-supported technology and practices.
Greater national and international cooperation and consensus on sustainable development issues, policies, goals and actions.	• Participation in, and influence on, national and international multi-stakeholder approaches to sustainable development issues. • Degree of leveraging by NRCan from shared S&T projects.
Fiscal, regulatory and voluntary approaches that encourage the sustainable development of natural resources.	• Participation in, and influence on fiscal, regulatory and voluntary sustainable development initiatives. • Influence of NRCan's S&T-based recommendations on regulatory regimes.

* Performance indicators are currently being reviewed.

Breakdown of Planned Expenditures for 2004-05

$182 million (or 17 percent) of NRCan's total planned expenditures of $1,093 million will be spent on strategies informing Canadians regarding natural resources. The bulk of the planned spending will be directed toward connecting Canadians to geospatial information ($26.3 million), investments in support of forest sector programs and special initiatives ($25.5 million), policy R&D ($51.9 million), and providing S&T and innovation support ($66.7 million). More details can be found on pages 9 and 10.

Key commitments

Horizontal delivery of scientific data, information and knowledge across multiple channels – As a science department, NRCan realizes the importance of a dynamic approach to managing data, sharing information, and integrating knowledge products and services, in terms that benefit both the Department and its stakeholders. This recognition is reflected in the Department's contributions to and implementation of the *Government of Canada (GoC) Service Vision*.

NRCan-On-Line (NOL) Goal – To be a trusted and authoritative source for knowledge, information and data about Canada and its natural resources, providing high quality, seamless service to citizens, clients and employees (www.nrcan.gc.ca).

The following provides information on NOL's strategic objectives that will be addressed through activities carried out in each of the next three years ($1.5 million/year):

- accelerating the development of a knowledge infrastructure that supports federal S&T, and policy activities;
- promoting innovative approaches to the mobilization of S&T and policy knowledge by leveraging the innovation within the Department to achieve seamless integration of services and products through the multi-channel delivery model;
- transformation of service delivery to achieve the GoC vision;
- developing performance measures to demonstrate progress towards the NOL goal; and
- leveraging stakeholders' expertise, knowledge and resources in support of service innovation.

The Department's participation in the increasing horizontal nature of government service delivery is reflected by initiatives such as the Sustaining the Environment and Resources for Canadians Cluster; the Interdepartmental Web Mapping and Visualization initiative; the Public Safety Portal; the Science and Technology Cluster; the International Gateway and the Innovation Cluster on the Business Gateway of the Canada site along with emerging projects such as the Federal Science e-Library initiative. These efforts will continue in 2004-05.

The Department makes use of these platforms to promote a vision for Government On Line beyond transactional initiatives, supporting the recognition that knowledge and access to information assets are just as important for Canadians. As a leader in federal science and technology initiatives, the Department is promoting an issues-based approach both in terms of coordinating federal activities through the use of resources and facilities, as well as the delivery of this knowledge using both traditional and new approaches, such as e-science.

Did you know? The revised *Canadian Environmental Assessment Act*, which came into force on October 30, 2003, results in a significant overhaul of the decision-making process of projects at the federal level. NRCan will receive $2.5 million over the next five years to support new requirements related to the revised Act. Changes to the *Act* present NRCan with new challenges as well as opportunities to make the process more open to public participation and scrutiny as well as more predictable and efficient in the context of increased joint ventures with provincial and territorial stakeholders.

Developing geospatial information for decision-making – GeoConnections – a national partnership initiative led by NRCan – is into its last year of development ($10.5 million in 2004-05). For the past five years, the federal/provincial/territorial governments, private sector and academia have endeavored to build an infrastructure that facilitates easy access and use of geographic data for a variety of social, economic, environmental or citizen-based uses (i.e., natural disasters, urban development, and location-based decision making).

More information can be found at www.cgdi.ca.

In 2004-05, while continuing to build the infrastructure and make more geographical information available on-line, NRCan will focus on the following program priorities:

- develop and enable communities of practice to address/resolve issues – such as disaster management, health, real property, environment, forestry, fisheries & oceans, Aboriginal, agriculture – through the use of the infrastructure ($3.6 million);

- strengthen and develop collaborative inter-governmental partnerships to:
  - ensure users have access to basic quality information, at no cost, and with unrestricted use through GeoBase (www.geobase.ca), a federal-provincial-territorial initiative ($2.7 million);
  - promote a better understanding of the country for Canadians through the Atlas of Canada which will present new perspectives on national issues ($700,000);
  - support and enhance federal geomatics cooperation through an Inter-Agency Committee to build the Canadian Geospatial Data Infrastructure to address policy issues, optimize decision-making and increase the use of data ($800,000);
  - complete its work with 100 communities through the Sustainable Communities Initiative which addresses geospatial capabilities that support the needs of rural, remote and Aboriginal communities and municipalities in local planning and governance ($750,000);
  - consultation with stakeholders to strengthen the competitiveness of the Canadian geomatics industry ($1.7 million);
  - implement human resources strategies to build geomatics capacity, i.e., scholarships ($250,000); and
- conduct independent evaluations for the remaining elements of the GeoConnections program.

Furthering Canada's forest knowledge for balanced decision-making – NRCan plays a leading role in providing Canadians with world-class forestry knowledge to enable more informed decision-making and improve sustainable forest management practices over time, and to position Canada to effectively report on its key national and international forest commitments. The Department does so through its forest S&T and policy development initiatives, and in the development and implementation of integrated information systems and in the tabling of annual and periodic reports.

Under the auspices of the Canadian Council of Forest Ministers (CCFM), and in partnership with forest stakeholders, the Department will:

- continue to develop the National Forest Information System (NFIS) which will enable Canadians to access integrated forest information on a wide range of social, economic and ecological information held by custodial agencies across the country ($250,000 earmarked from the provinces and $150,000 from NRCan) www.nfis.org;
- by 2005, implement a new National Forest Inventory design which will enable Canada to assess and monitor the extent, state and sustainability of Canada's forests in a timely and accurate manner;
- expand the current knowledge, understanding and awareness of the role private woodlots play in Canadian society to ensure that decision-makers at all levels of government understand their benefits, and that policies reflect that understanding;
- in cooperation with Canada's Model Forest Network, increase research on water and forests to better understand the linkages between water and forest management practices and water quantity and quality;
- by 2005, report Canada's progress on sustainable forest management using its newly revised Criteria and Indicators (C&I) framework consisting of six criteria and 46 indicators;

- by 2006, develop a national framework for reporting on forest associated species at risk, alien invasive species, and species of special significance to develop Canada's capacity for biodiversity reporting;
- continue to develop the Canadian Classification of Forest Ecosystems for use in ensuring consistent national reporting on C&I biodiversity criteria;
- continue to work with U.S. and Mexican counterparts to address forest health issues at the North American scale; and
- continue to play a leading role in the action plan of the New England Governors/Eastern Premiers looking at the impacts of acid rain on the productivity of northeastern North American forests and consequent ramifications to the forest industry of the region.

Enhancing existing and establishing new strategic partnerships in Canada's forest sector – As national steward for the sustainable management of Canada's forest resource, NRCan is committed to ensuring that national consensus and synergies are reached and maintained across diverse forest interests.

By mid-year 2004, the Department will re-establish and lead a federal interdepartmental committee, consisting of 20 federal departments and agencies, to develop and implement federal action plans in response to the fifth *National Forest Strategy (2003-2008) - A Sustainable Forest: The Canadian Commitment*. The desired outcome is to make consequential improvements in forest policies and practices, over the next five years, aligned with federal priorities such as: sustainable development, competitiveness, innovation, national consensus, public participation, rural and community development, Aboriginal capacity, private wood lot development, trade and investment, and work opportunities. As well in 2004-05, NRCan and its partners will implement the CCFM's new operating framework and will develop an evaluation strategy aimed at assessing Canada's progress against these directions.

The Canadian Forest Innovation Council (CFIC) is responsible for overseeing the development of a Canadian Forest Sector Innovation Vision that will lead the sector within the next decade to become Canada's leading industry and wealth creator. In 2004-05, NRCan, as a CFIC member, will develop consensus and advocate means to deliver the vision, and to champion innovation with an aim to increasing levels of innovation investment. Funding for 2004-06 is $400,000 each from the Government of Canada, industry, and the provinces/territories.

From a local/community level partnership perspective, the Model Forest Program (MFP) and First Nations Forestry Program (FNFP) bring together stakeholders – industry, all levels of government, First Nations, research communities, Aboriginal peoples, and local community groups – to promote Canada's sustainable forestry agenda and the adoption of innovative forest management practices.

The MFP addresses sustainable forest management issues in eleven model forests across Canada through the application of Geographic Information System technologies for forest management and scenario planning, leading-edge wildlife, alternative silviculture and harvesting practices research, the development of innovative land tenure models, the implementation of local level indicators, and sustainability codes of conduct for woodlot managers and forest contractors.

In 2004-05, NRCan will continue to implement Phase III (2002-08) which includes strengthening the Model Forest Network function and collaboration between the individual model forests; building national level partnerships and initiatives; and actively participating in the implementation of Canada's 2003-08 National Forest Strategy. In particular, NRCan will focus on extending the MFP's influence beyond current program boundaries. As announced in July 2003, the Nova Forest Alliance Model Forest, for example, will be supporting a private woodlots best practices initiative in Prince-Edward-Island. Similarly, the Western Newfoundland Model Forest is developing a joint initiative with the Innu Nation of Labrador to support their participation in sustainable forest management. At the national or network level, the MFP will continue to support strategic initiatives such as carbon accounting, climate change, private woodlots, and Aboriginal involvement in sustainable forest management. Costs for implementing the MFP have been adjusted to $38 million over five years. Planned expenditures for 2004-05 is forecasted at $7.5 million. Additional information on the MFP can be found at www.modelforest.net.

The FNFP (2003-08), a national partnership program jointly managed and funded by NRCan and Indian and Northern Affairs Canada (INAC), is a capacity- building program which assists First Nations in the sustainable management of their forest resources and positions them to participate in local and regional economic development opportunities. Over the 2004-08 program delivery period, the FNFP will place more emphasis on promoting First Nations participation and benefits from regional scale sustainable forestry development opportunities off-reserve. In this regard, discussions with all levels of government, industry, and First Nations are underway to develop regional scale partnerships with initial concentration in the provinces of New Brunswick, Saskatchewan, and British Columbia. Funding for the FNFP over the five year period is $6.5 million annually; $3.25 million from INAC; $1.75 million from NRCan; and $1.5 million from the Mountain Pine Beetle program. Additional information regarding the FNFP is available at www.fnfp.gc.ca.

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Strategic Outcome #2 - To provide Canadians with sustainable economic, social and environmental benefits derived from natural resources for present and future generations.

Planned Expenditures
2004-05: $340.0M
2005-06: $569.0M
2006-07: $849.2M

Short to medium-term objectives	Performance Indicators*
Greater economic opportunities and encouraging investment in innovative and higher value uses of natural resources.	• Economic influence of NRCan S&T. • Employment levels and productivity in resource and resource-related industries. • Contribution of the natural resources sector to the GDP. • Capital investment in resource and resource-related industries.
Expanded access to international markets for Canadian resource-based products, knowledge, technologies and services.	• Value and percent of exports of resource-based products.
Increased capacity of Aboriginal, rural and northern communities to generate sustainable economic activity based on natural resources.	• Number of shared projects and funds leveraged with rural, Aboriginal and northern communities. • Employment level of Aboriginal people and northern residents in resource sectors.

* Performance indicators are currently being reviewed.

Breakdown of Planned Expenditures

In 2004-05, NRCan plans to spend $340 million or 31 percent of its total planned expenditures of $1,093 million on providing Canadians with sustainable economic, social and environmental benefits from natural resources. The Department's statutory contributions for offshore oil industries account for $178 million or 52 percent of spending in this strategic outcome; details can be found in Annexes, table 3. Other significant planned spending will be directed toward investments in support of forest sector programs and special initiatives ($38.3 million), policy R&D ($35.7 million), and providing S&T and innovation support ($58.5 million). More details can be found on pages 9 and 10.

The significant increase in planned spending from $340 million in 2004-05 to $849 million in 2006-07 is due to increased payment obligations to the Newfoundland Offshore Petroleum Revenue Fund and the Nova Scotia Offshore Revenue Fund. Increased oil production in the offshore will result in increased royalty revenues to the federal government which, in turn, under existing agreements, trigger offsetting contributions back to the provinces. These increases represent the attainment of full production levels in an emerging commercial sector.

Key commitments

Promoting renewable energy and cleaner fossil fuels – Increased use of renewable energy and innovative new technologies for cleaner fossil fuels can contribute to meeting Canada's Kyoto target while getting Canada's industrial sector on a longer-term lower emissions intensity path and creating significant economic opportunities for Canadian companies.

SolarWall ventilation unit at Canadair facility

Renewable energy – Canada is a world leader in the production of renewable energy, with about 17 percent of its primary energy supply coming mainly from two sustainable sources: water (11 percent) and biomass (6 percent). Emerging renewable energy sources such as wind power and solar energy, both for heating and electricity generation, are rapidly gaining in importance and acceptance by utilities and industry (http://www.retscreen.net/; http://www.canren.gc.ca/; http://www.reed.nrcan.gc.ca).

The Wind Power Production Incentive is a $260 million program to increase wind power capacity by 1,000 megawatts over a five year period. After its first two years of operation, it is expected that the program will have supported 9 wind farms representing 109 megawatts of capacity. An additional 10 projects, representing 500 megawatts of capacity, are in advance state of planning and are expected to receive support from the program starting in 2004-05. Total contribution payments in 2004-05 are estimated to reach $10.5 million. Under the program, new wind farms can receive a production incentive during their first ten years of operation.

Did you know? Nuclear energy will continue to play a vital role in Canada's overall mix of power sources given that it currently provides 13 per cent of Canada's total electricity needs and helps Canada to meet its air quality and climate change commitments. Over the planning period, NRCan will assist the Minister in the consideration of Atomic Energy Canada Limited's Advanced CANDU Reactor program; put in place a model for Canada's participation (government, industry and academia) in the Generation IV International Forum (which coordinates collaborative R&D for the next generation of nuclear power systems); continue to work to ensure that the right policy framework is in place for Canada's nuclear program; and take the necessary policy measures to ensure that the nuclear option remains available to Canadians.

The Market Incentive Program, a $25 million program ($8.5 million in 2004-05) ending in March 2006, should stimulate sales by 20 percent from emerging renewable electricity sources to residential and small business customers. Furthermore, several suitable proposals have been received under a first Request Letters of Interest from electricity distributors with whom NRCan may be able to negotiate and sign a contribution agreement.

There is an increasing interest, in Canada and abroad, to shift to a bio-based economy that relies on biological resources (biomass from forests, plants, crops, industrial and marine waste, microorganisms) and bioprocesses (fermentation, biocatalysis, biosensors, and metabolic engineering) instead of fossil fuels.

Esso oil rig in Beaufort Sea. R&D on ice-structure interaction will help develop and regulate northern oil and gas production.

This work is important because it will increase energy security by diversifying our energy sources and becoming less reliant on fossil fuels, and contribute to the economic development of our rural communities. NRCan has recently integrated its bio-based R&D programs (about $2.8 million/year until 2006-07) into a new program that will focus on activities such as biomass availability, conversion and use of biological resources to biofuels and bioproducts, and bioprocesses.

Cleaner fossil fuels – Canada's oil sands have more than 300 billion barrels of ultimately recoverable reserves, more than the proven oil reserves of Saudi Arabia. By 2010, when the current wave of oil sands development is complete, two million barrels a day of bitumen and synthetic crude are expected to be available to the North American market. Upgrading is a necessary step in changing oil sands bitumen from a black tar substance into a simulated conventional crude oil; oil refineries then can process this changed bitumen into products such as transportation fuels. In 2004-05, NRCan will spend $3.7 million on R&D to evaluate new technologies for the primary upgrading of bitumen and heavy oil. An important research aspect will be improving the marketability and reducing the transport costs of crude oil products (www.nrcan.gc.ca/es/etb/cwrc).

CO_2 emissions from coal-fired electricity generation accounts for nearly 100 megatonnes (Mt) of Canada's greenhouse gas (GHG) emissions. Canada has more than eight billion tonnes of proven coal reserves, storing more energy than all of our oil, natural gas and oil sands combined. Therefore, in close cooperation with other government departments and industry stakeholders, NRCan is leading the development of a *Clean Coal Technology Roadmap* focused on creating a vision of how coal will most likely be used in Canada in the 2020 time frame. NRCan's direct financial support for the roadmap over the planning period is $275,000 (www.nrcan.gc.ca/es/etb/cetc/combustion/cctrm/).

Did you know? NRCan conducts R&D to support government regulations for the responsible selection and development of oil and gas production sites and pipeline routes in the North (Mackenzie and Delta Valley, Beaufort Sea). The aim is to ensure a secure supply of natural gas for the future and encourage energy diversity in Canada. The Department will increase its current R&D funding by an estimated $2.3 million ($4 million total) by 2005-06.

Facilitating the sustainable development of offshore oil and gas – The Atlantic Energy Roundtable has provided a critical forum for governments, regulators, suppliers and operators to maintain a dialogue that focuses on maximizing this sector's contribution to the economic and social well-being of the region, while minimizing anthropogenic effects on the natural environment. In early 2004, NRCan will deliver a timetable and commitment for implementing concurrent regulatory approval processes, and deliver the Supplier Development Initiative work plan for local opportunity generation and continuous improvement. By Fall 2004, NRCan will report to ministers on progress and seek commitment on further recommendations to support the sustainable development of the offshore industry.

Effective electricity policy, programs and S&T – As directed by the Council of Energy Ministers in September 2003, NRCan will work with provinces and territories on a range of electricity issues including reliability standards; accelerating the process for environmental and other permits; and promoting renewable and cleaner energy sources, as discussed on the previous page. The federal-provincial-territorial electricity working group will report to the Council of Energy Ministers in 2004. Moreover, NRCan is leading an interdepartmental working group, consisting of eight federal departments and agencies, to identify opportunities to improve regulatory efficiency, without compromising the effectiveness of the regulations.

With respect to distributed electricity generation, it may play an important future role in Canada's electric power industry, with the potential to reduce our dependence on fossil fuels and harmful effects on the environment (early estimates predict GHG emissions reductions of 40-50 Mt per year by 2025). Because power plants are located at the site where power is consumed, efficiency can be greatly improved, thus reducing GHG emissions and the need for costly transmission lines. NRCan will spend an estimated $850,000/year until 2006-07 on R&D aimed at improving the efficiency of combined heating, cooling and power technology of distributed generation facilities. Efforts will focus on power generation units less than 500 kW. NRCan will also work with industry to overcome technical barriers mainly related to codes and standards required for connecting distributed generation plants to the electrical grid system.

By 2006, NRCan expects an annual overall efficiency of 75 percent in local power generation systems, a reduction of 10 percent in the costs for renewable energy systems in off-grid communities, coupled with a 10 percent reduction in the use of conventional fuel in the communities, and more efficient conversion of fossil fuel to electricity.

Stimulating new investment in mineral and energy exploration – Geoscience knowledge helps attract investment in an increasingly competitive global exploration market.

> ***Did you know?*** Gas hydrates are an important potential energy resource, making research into their extraction and use significant for the development of future energy policy. Canada has vast resources of these compounds in the Arctic and off its coasts. Results from the NRCan-led Mallik 2002 production research well program proved that gas production from gas hydrates is technically feasible and could provide an opportunity to develop a potentially very large and environmentally-friendly fuel resource. NRCan's continued geoscience research will help characterize the resource with a view to attracting investment and development by the private sector resulting in economic growth.

Responsible development of mineral and energy resources will be the basis for future economic sustainability and quality of life for northern Canadians – most of whom are First Nations or Inuit. Through the Northern Resources Development Program, NRCan is actively constructing a comprehensive, regional mineral and hydrocarbon energy geoscience knowledge framework to catalyze responsible economic development through new private sector investment in exploration. In addition, this will contribute to the development of the knowledge, skills and capacities needed by northerners to create employment opportunities in northern communities. By 2005, NRCan will release a digital geoscience compilation and synthesis of the central Kivalliq region, Nunavut

(Western Churchill Province) which will help Canada's exploration industry to expand the mineral potential of this northern region that is currently experiencing active diamond, gold and nickel exploration. New geoscience knowledge is used by industry to focus their activities, thereby reducing the economic risks associated with exploration in remote regions.

Moreover, the Targeted Geoscience Initiative (TGI) – which was extended for two years in Budget 2003 – will continue to provide integrated geoscience knowledge pertaining to areas of elevated mineral potential with the intent of stimulating mineral exploration. With an allotment of $5 million/year for 2003-05, NRCan commenced 17 new geoscience projects in partnership with provincial and territorial agencies, industry and academia. Extension of TGI allowed incorporation of energy geoscience projects in key areas across Canada with emphasis on the North. Research for hydrocarbon and/or petroleum potential will be conducted. As well, up-to-date scientific maps and surveys for these projects will be completed and hydrocarbon potential will be determined. The release of new geoscientific knowledge from this initiative is expected to significantly increase the effectiveness of private-sector energy and mineral exploration, and consequent development of northern communities.

Did you know? Studies have shown that for every $1 million of government investment to enhance the geoscience base, $5 million of private sector exploration expenditures will likely be spent. This, in turn, will result in discovery of new resources with an average in situ value of $125 million.

Based on increased exploration resulting from the initial $15 million investment in TGI, it is expected that further stimulation in exploration, especially for energy, will occur as project leaders publish compilations, maps and databases. More information on TGI can be found at http://nrcan.gc.ca/gsc/tgi_e.html.

Did you know? NRCan provides Mineral and Energy Resource Assessments. Why is this important? An energy and mineral resource inventory is undertaken to assess the possible economic consequences of removing an area from resource exploration and development. NRCan's mineral resource assessments have resulted in changes to five proposed park boundaries in recent years.

Providing sound economic development tools to people occupying Canada Lands – The exponential growth of Aboriginal self-government initiatives resulting from devolution, self-government and the Métis court decision is fostering a rapid growth in the Aboriginal land base. This land base will double over the next few years resulting in increased demands for NRCan to provide a land survey system and a functional property rights infrastructure, without which cultural and economic growth for Aboriginal Peoples and other communities living on Canada Lands would be stalled. This, along with orderly and peaceful development of natural resources, promotes strong self-sufficient communities and good governance.

The Canada Lands Survey System supports a property rights infrastructure that includes land surveys, land registrations, and land management systems. Over the planning period, NRCan will:

- provide training in the use and maintenance of property rights system to various Aboriginal groups in conjunction with Indian and Northern Affairs (INAC);
- provide comprehensive survey system standards, instructions, guidelines, quality monitoring, signed partnership agreements in support of NRCan's obligations;

- provide clearly defined boundaries;
- provide access to Canada Lands Surveys Records; and
- fulfil the survey-related obligations of 8 land claims agreements.

Did you know? Canada Lands include 180,000 square kilometres of national parks, 3.9 million square kilometres of territories, 267,000 square kilometres comprising 2800 First Nation reserves and 6.5 million square kilometres of offshore areas.

Planned expenditures for 2004-05 are: Canada Lands Survey System and other programs ($10 million), land claims programs ($6 million), and management of survey programs in support of other government departments ($6 million). Most of the funding will be used to issue contracts to the private sector and meet NRCan's obligations under various agreements and/or legislation. Additional information about land management can be found at www.lsd.nrcan.gc.ca/.

Enhancing the competitiveness of Canada's forest sector – NRCan engages in programs and initiatives that enhance and protect international market access and the competitiveness of Canada's forest sector. For example:

Expanding Canada's offshore market development opportunities – NRCan's five-year $35 million Canada Wood program – which includes $1.4 million for the Canada-China Wood Products Initiative – is designed to assist wood product industry associations to strategically develop market opportunities for both primary and secondary wood products in key markets. Activities funded by NRCan, through Canada Wood, focus primarily on existing and emerging markets in Asia and Europe.

In 2004-05, Canada Wood will partner with industry associations to brand Canada's wood products at international trade shows. A concerted effort will be made by all partners to enhance our presence with a unified design that readily identifies Canada as the source of quality wood products. Similar to our approach in drawing the industry associations together in one office under a single Canada Wood banner in international markets, the wood products industry will be encouraged to participate together at the larger, prestigious trade shows. By pooling financial resources, Canada's presence will be more visible with a more sophisticated, professional appearance. Such a presentation would be expected to garner more interest from potential customers.

Canada has made great strides in having North American wood-frame construction standards accepted in the Japanese, Chinese and Taiwanese markets. In 2004-05, further testing of wood products will be required in Japan to maintain access to the market place. In Taiwan and China, the industry will continue to focus on training builders and architects and providing construction guides in order to encourage the increased use of wood-frame construction. In the spirit of cooperation, industry associations are proposing to develop

a “Canada Wood” Market Access Structure. Canadian wood associations are exploring ways to jointly set up this structure in order to coordinate effective intervention with overseas regulators through a single interface and reduce marketplace confusion.

Developing an overarching market strategy in targeted offshore countries is one of the goals of Canada Wood. In-depth market research is required to know where Canadian products can be profitably introduced. Competitive market analysis, distribution systems, niche market opportunities, and knowledge of codes and standards must all be taken into consideration before entering a new market successfully. In 2003-04, a market development strategy for South Korea was initiated. In 2004-05, Canada Wood and its partners will be developing strategies for Taiwan, Japan and China.

Domestically, the five-year, $15 million Value to Wood research and technology initiative will continue to be implemented. In 2003-04, Forintek Canada Corp. and the universities of British Columbia, Toronto, Laval and New Brunswick conducted research designed to address the knowledge and technology needs of Canada’s value-added wood sector. Moreover, the Program leveraged $2 million from provincial governments and federal regional development agencies to expand technology transfer efforts across the country. Through this funding, industry advisors are now located in each region of Canada and provide technical expertise to value added firms to help improve plant efficiency, product quality, market share and profitability.

Protecting access to foreign markets – In 2004-05, NRCan has earmarked $20.1 million to programs and initiatives designed to help mitigate the effects of softwood lumber trade dispute with the U.S. on Canada’s forest sector. Canada and the U.S. have been embroiled in a trade dispute over softwood lumber for the past two years which has seen the U.S. impose duties totaling 27.2 percent on Canadian softwood lumber in response to allegations that producers in Canada are subsidized and dumping cheap lumber into the U.S. market. Canada rejects these allegations and is pursuing a two-track approach to resolve the dispute. Track I consists of legal challenges to the U.S. duties through the World Trade Organization (WTO) and North American Free Trade Agreement (NAFTA). Through Track II, Canada is seeking a long-term policy-based solution to the dispute through negotiation.

In Track I, NRCan has assisted the Department of Foreign Affairs and International Trade (DFAIT) and legal counsel in preparing evidence for the initial U.S. duty investigations and continues to so for the U.S. administrative review of the duties currently being conducted under U.S. law. More significantly, NRCan has been, and will continue to be the main economic advisor to the legal teams conducting the WTO and NAFTA challenges. Canada has won some significant victories in these legal challenges but U.S. appeals and challenges will mean the legal battle will continue for some time yet requiring ongoing NRCan support.

In Track II, NRCan and DFAIT will continue to play an integral role in developing Canada's negotiating strategy and in the conduct of the negotiations. DFAIT and NRCan also work with all provincial and territorial governments and provincial industry associations to maintain a national consensus on the negotiating strategy. NRCan also provides

significant analytical support to the negotiating team before and during negotiations.

In collaboration with CCFM and DFAIT, NRCan will continue to provide factual and authoritative information and advice to Canada's embassies and missions through the CCFM-led International Forestry Partnerships Program (IFPP). The Program's objectives are to: counterbalance negative and biased information in the international community; position Canada as an environmentally responsible forest nation; promote Canada's forest products as an environmentally-friendly and renewable choice; and support Canada's trade framework by promoting Canadian forestry initiatives and achievements to ensure that trade barriers, based on criticism of Canadian forest practices, are not erected in export markets. Approved funding for the IFPP has been established at $3.4 million over five years (2000-05) cost-shared between the federal government and the provinces.

Achieving mutual benefits from trade and investment abroad by the minerals and metals industries – Poverty alleviation and economic growth are dependent on investment. For many developing countries and remote regions of Canada, the minerals, metals and other resource industries are a major source of investment and economic development. Canadian exploration and mining companies operate in over 100 countries, hold more than 2,600 properties abroad and, as a result, represent Canada's most significant economic linkage with many developing countries and economies in transition.

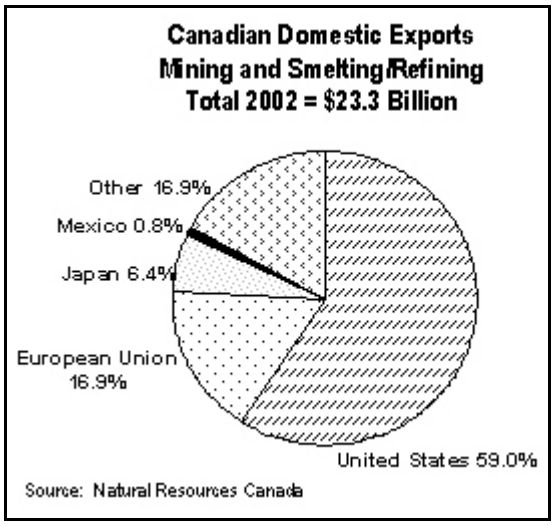
Significant investment by Canada's minerals and metals industries has created extensive trade and investment opportunities. For example, the industries' investment in Chile established a viable basis upon which Canada was able to negotiate the Canada-Chile Free Trade Agreement. This has provided additional opportunities to other sectors of the Canadian economy, including technology exporters. Investments by Canadian exploration and mining companies in other parts of the Americas continue to support similar opportunities in ongoing trade negotiations.

Canada, through its geography and geology, is blessed with an abundance of natural resources. Through extensive experience and wise stewardship of these naturally occurring assets, Canada has successfully fostered an innovative and responsible natural resource sector that has come to be recognized internationally. Consequently, Canada can make significant contributions in areas such as governance, financing, resource policy, the organization and management of data, and science and technology to many developing countries that currently have investment opportunities. Canada can advance wise and efficient resource stewardship through a uniquely Canadian lens, the benefits of which will accrue to both developing countries and Canada. NRCan, through its extensive participation in various bilateral and multilateral fora on policy and scientific matters, has an excellent platform for promoting Canadian interests.

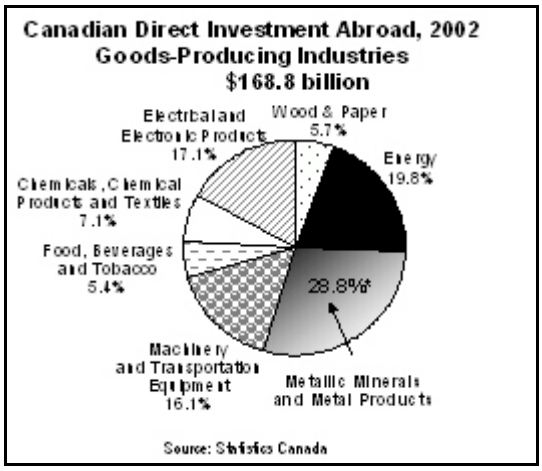
In addition to poverty alleviation in developing countries, investment abroad will also benefit Canada allied industries. These allied industries include suppliers of goods and equipment, as well as services, including financial services. More than 2200 allied companies are located across Canada in all provinces and territories. Indeed, minerals and metals industries provide markets for many of

these allied industries both domestically and internationally.

Canada's minerals and metals industries are the largest investors abroad among Canada's goods-producing industries with assets valued at nearly $50 billion. To fully realize the potential benefits, it is important that Canada's minerals and metals industries act and be viewed as economically, socially and environmentally responsible. In addition, some of Canada's smaller companies have leveraged international opportunities provided by the mining industry as part of their growth strategies, successfully moving them into the ranks of mid-sized companies. Clearly, the trend towards increased international activity by Canadian companies can bring important benefits to Canada.



Canada's exports of mineral and metal commodities average $23 billion annually. In the development of vibrant domestic industries, there are significant challenges to the growth of these exports. The roles of environment and health have increasing importance to the growth of non-tariff barriers. Many of these non-tariff barriers are unjustified and may be inspired by competing commercial interests. This is one of the main challenges facing Canada's minerals and metals industries, and NRCan's scientific and policy expertise will be essential in responding to these challenges.



***Canada's metallic minerals and metals products companies lead our economy in foreign direct investment abroad.**

NRCan's international activities will result in the following outcomes:

- an intergovernmental forum on mining and metals is established whereby governance and other issues facing developing and developed countries can be discussed and acted upon (see www.globaldialogue.info/ for initial steps towards this goal);
- an NRCan-industry market access review committee is established;
- Canadian expertise is provided to developing countries in supporting sustainable development of mineral resources and its contribution to poverty alleviation;
- sound science and arguments are developed in support of DFAIT's representation in opposing unnecessary barriers to trade (see www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/enviro/metals/metals-e.htm for information about NRCan's research into metals in the environment);

- the participation of exporters in allied industries in trade shows and missions is increased within the context of an overall strategy for allied industries; and
- guidelines for best practices are developed that result in Canada being an internationally dominant force in the sustainable development of minerals and metals (see www.nrcan.gc.ca/mms/sociprac/intro_e.htm for information about NRCan's current program to promote corporate social responsibility in mining).

Optimizing the contribution of mineral development to Aboriginal communities – The minerals and metals industries are among Canada's largest actual and potential employers of Aboriginal people. In many instances, they offer relatively long-term future employment opportunities, notably for younger Aboriginal people in rural and northern communities. In addition, the industries purchase significant supplies and services from Aboriginal companies and indeed have inspired the creation of many such companies. To illustrate, the Diavik diamond mine spent $500 million in its construction phase through Aboriginal joint ventures. During operations over the last 10 years, Syncrude has purchased about $500 million in services and supplies from Aboriginal companies.

Approximately 1200 Aboriginal communities are located within 200 km of producing mines in Canada. The future prosperity of these communities in rural and northern regions is inextricably linked to the natural resources that surround them. Many skills and Aboriginal companies developed to serve mining are transferable to other mining companies and other industries. Consequently, the mining industry is, and continues to be, part of the solution to the challenges confronting Canada's Aboriginal people and communities. Moreover, the increased role of Aboriginal people in mining may assist in meeting the expected shortage of skilled workers in the industry. Canadian Aboriginal-industry leading practices may also serve as a basis to promote international discussions aimed at sharing know-how for implementing sustainable development in indigenous communities elsewhere in the world.

This group of Aboriginal workers (Jason Mamakua, Tom McKay, Desmond Keewasin, Joe Singleton and Sherman Gliddy) successfully completed diamond drilling helper training at Placer Dome's Musselwhite gold mine in Northern Ontario (photo courtesy of Placer Dome).

A key challenge is to advance initiatives that will increase the contribution of the minerals and metals industries to the prosperity and well-being of Aboriginal communities. Opportunities to be pursued include: economic and business development in Aboriginal communities; and capacity building, skills and knowledge for enhancing resource management, and participation in the economy over the long term. Movement in this direction will improve Aboriginal-industry-government mutual understanding and expand partnerships aimed at increasing Aboriginal participation in minerals and metals activities.

NRCan's Aboriginal initiatives will result in the following outcomes:

- Aboriginal policy and science practitioners are invited to intern at NRCan to advance their skills and knowledge;
- an information toolkit on mining for use in Aboriginal communities is prepared and distributed;
- an on-line Aboriginal communities minerals and metals activities map is established (see www.nrcan-rncan.gc.ca/aboriginal/aboriginal-maps-e.htm for more information);
- Aboriginal companies participate in trade and investment missions to expand their business opportunities;
- a national workshop and/or roundtable is held involving Aboriginal organizations, governments and other stakeholders in cooperation with mining companies;
- adequate Aboriginal representation is provided at the annual federal-provincial/ territorial Mines Ministers' Conference;
- an Aboriginal-mining industry partnership award is created to recognize Aboriginal contributions to the mining industry;
- a video and other communication products for Aboriginal communities in northern Ontario are produced and distributed; and
- taking into account the above, a strategy is developed to optimize the contribution of minerals and metals activities to the well-being of Aboriginal communities.

See www.nrcan.gc.ca/mms/abor-auto/abo_e.htm for general information about NRCan's work with Canada's Aboriginal people.

Did you know? Despite difficult climatic conditions, the Ekati diamond mine in the Northwest Territories does not disrupt the local environment. Advanced technology and help from the local Aboriginal community allowed Ekati to take into account the local caribou herd's migratory pattern and other ecological factors. As a result, the mine sets a new environmental standard. With its strong commitment to employing local community members and businesses, the mine will improve the standard of living for people in Yellowknife and throughout the western Arctic for years to come.

Innovating in the minerals and metals industry for sustainable development –

Innovation is a critical requirement for the future survival and growth of Canada's minerals and metals industries and for the communities and allied industries that depend upon them. Canada's minerals and metals industries are facing fierce international competition, globalization of markets, consolidation and low metal prices in the long term. Also, high environmental performance expectations confront the industry, (e.g., the Kyoto Accord, the Metal Mining Effluent Regulations, and increased international concerns over metals as "hazardous materials") as do public concerns over safety and security.

Internationally, Canada has one of the finest and strongest scientific and technical infrastructures (comprising expertise and facilities in government, industry and universities) related to the minerals and metals industries. This infrastructure provides Canada with a timely and unique opportunity to contribute to new innovative technologies and productivity improvements. Indeed, this range of expertise offers the potential for developing new manufacturing opportunities that serve the industry and contributes to problem-solving in Canada and abroad. However, much of this scientific infrastructure has been eroded over the past decade.

To realize the value-added benefits of minerals and metals, cost-effective advanced materials need to be developed for the construction, energy and automotive industries. The minerals and metals industries require processes that will lead to reduced emissions, energy savings and cost-effective technologies while increasing productivity, meeting environmental regulations and providing a

safer work environment. Partnerships with industry, universities and other stakeholders are essential to the development of innovative solutions to all of these challenges.

Canadian mining continues to innovate and automate to maintain its international competitive edge. The remote-controlled scoop tram shown here is being used to collect and transport uranium ore 640 metres underground at the world's largest and highest-grade uranium mine at McArthur River, Saskatchewan (photo courtesy of Cameco Corporation).

NRCan's activities will result in the following outcomes:

- new materials are developed to improve the durability and reduce life-cycle costs of major concrete infrastructure (see www.nrcan.gc.ca/mms/canmet-mtb/mtl/research/concrete_e.htm for information on NRCan's ongoing concrete research);
- the Academic User Access Facility is utilized to add value to minerals and metals and to train highly qualified personnel (see www.nrcan.gc.ca/mms/canmet-mtb/auaf/default_e.htm);
- a strategy is developed to maintain the viability of Canada's smelting industry (see http://www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/minproc/proc/proc-e.htm for information on NRCan's metallurgical processing research);
- research is initiated on environmentally friendly processing technologies and materials that reduce GHG emissions while enhancing the international competitiveness of Canada's materials and processing industries;
- an international program on economic alternatives to cyanide use in gold processing is launched;
- an international research program on the behaviour of metals in soils and aquatic environments is initiated;
- a design of a national inventory of orphaned and abandoned mines is developed and submitted to provincial and territorial governments; and
- taking into account the above and in support of innovation, a S&T strategy and a resource recovery strategy are developed.

Making Canada an investment location of choice for the minerals and metals industries – Continued

increased investment in Canada's minerals and metals industries is essential for development in remote regions of Canada, for sustaining Canada's international role in mining and metals, for increasing the growth of allied industries and communities, and for contributions to Canada's positive balance of trade, among other things. Although Canada has a large landmass with favourable geology, mineral resources will only be discovered and developed with a supportive investment climate that attracts the needed capital. In addition to its legal framework and political stability where Canada typically ranks high relative to competing jurisdictions, other important business climate factors include corporate and personal taxation, the regulatory environment, and timely access to resources. Improvements in the competitiveness of Canada's mineral investment climate would be successful in leveraging a quick and significant response in the form of increased mining activity and jobs throughout Canada.

The minerals and metals industries are among Canada's world-class industries. A significant

proportion of the world's exploration and mining companies are Canadian-controlled and maintain head offices in Canada, even in the face of a growing share of international activity in their overall business. Head office location is an important factor in providing markets for allied industry sales of services and supplies. However, the current global environment of greater industry concentration, if coupled with a relative deterioration in Canada's investment climate, could lead to the loss of head offices.

Minerals and metals industries have played an important role in Canada's development. This map illustrates the location of communities where the minerals, metals and allied industries have had a significant impact on development.

A positive investment climate that attracts increased investment by the minerals and metals industries would be a major signal to the world that Canada attaches importance to this sector. It also attests to the fact that Canada is open for increased investment and would welcome foreign companies that are considering locating their head offices in Canada. An improved investment climate, including a competitive tax regime, would strengthen the success of Canada's minerals and metals industries and clusters of allied industries. Many communities in Canada owe their existence to investments by the minerals, metals and allied industries, for example, Labrador City, Rouyn-Noranda, Sudbury; Fort McMurray; Trail and Yellowknife (see map). Other communities in which the industries have played a major role include Sept-Îles, Saguenay, Hamilton, Toronto, Saskatoon and Vancouver.

NRCan's activities will result in the following outcomes:

- an international minerals and metals strategy is developed pertaining to Canada's relationship with developing countries;
- recommendations are made to the Department of Finance on whether the Investment Tax Credit for Exploration should be extended to bring reserves to sustainable levels (see www.nrcan.gc.ca/mms/efab/tmrd/d_inv_2d2_taxcredit2000.htm);
- recommendations are made to the Mines Ministers and the Department of Finance on whether to transfer the costs of community consultation and environmental studies to the exploration expense tax deduction category (see www.nrcan.gc.ca/miningtax/inv_2d2.htm#lnk8 for information on the current Canadian Exploration Expenses tax credit program);
- options for the future of the Dominion Coal Blocks are developed;
- a program is established to attract and retain head offices in Canada; and
- recommendations are developed that would lead to a more timely environmental permitting and a social license to operate.

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Strategic Outcome #3 - To provide Canadians with strategies that reduce the environmental impacts of natural resources development and use.

Planned Expenditures
2004-05: $479.7M
2005-06: $469.8M
2006-07: $282.3M

Short to medium-term objectives*	Performance Indicators*
Canada addressing its international Kyoto commitment to reduce greenhouse gas (GHG) emissions.	• GHG emissions compared to Kyoto protocol; and GHG emissions to GDP ratio compared to other countries. • Trends in use of renewable energy. • Trends in energy efficiency. • GHG emissions from federal operations. • Progress towards the identification of impacts and adaptation measures.
Scientific research, technologies and stewardship practices that reduce environmental impacts, conserve biodiversity, and increase the efficiency of resource development and use.	• Environmental influence of NRCan's science, technology and stewardship practices.
Canada's environment safeguarded from the risks associated with natural resource development and use.	• Progress towards addressing hazards associated with resource development and use.

* Short to medium-term objectives and performance indicators are currently being reviewed.

Breakdown of Planned Expenditures

In 2004-05, $480 million (or 44 percent) of NRCan's total planned expenditures of $1,093 million will be spent on strategies that reduce environmental impacts arising from resource production and use in all sectors of the economy. The Department's climate change activities account for $420.9 million in planned spending (breakdown on page 31). More details on the remainder of the planned spending under this strategic outcome can be found on pages 9 and 10.

Over the planning period, short-term funding allocations for climate change initiatives result in a significant temporary increase in reference levels within this strategic outcome. The Emissions Reduction Package, Ethanol Expansion Program, and Technology and Innovation Programs increase 2004-05 planned spending by $176 million. This short-term increase, combined with the sun-setting of Action Plan 2000 for Climate Change in 2006-07, result in the apparent dramatic decrease in planned spending from $480 million in 2004-05 to $282 million in 2006-07.

Key Commitments

Addressing climate change and other environmental issues – The Climate Change Plan for Canada (the Plan), released by the Government of Canada during the 2002 debate on the ratification of the Kyoto Protocol, proposes a wide range of action to reduce greenhouse gas (GHG) emissions, develop new long term mitigation technologies, improve climate science and assess its impacts. The Plan outlines emissions reduction targets for key broad sectors of the Canadian economy:

- 21 Mt from the transportation sector;
- 8 Mt for housing and commercial/ institutional buildings;
- 96 Mt from industry, of which 55 Mt through the Large Final Emitters Initiative and the remaining through programs;
- 8 Mt from agriculture, forestry and landfills; and,
- 12 Mt from international emissions reductions.

Achieving these targets will require significant action by all level of governments, industry and Canadians at large. The Government of Canada has begun to invest in a number of areas, committing $1.7 billion to a range of initiatives between 1998 and 2002. A further investment of $2 billion was announced in Budget 2003. Of this latter amount, $300 million has been allocated to arms-length foundations and a further $1 billion was allocated to federal programs in an August 2003 announcement (www.climatechange.gc.ca).

With NRCan at the centre of the federal government's domestic climate change policy and programs, the Department's activities over the next few years are being greatly enhanced. A strategic focus of the August 2003 announcement is the domestic emissions reduction strategy with an investment of $434 million. Several existing NRCan programs are being expanded and a number of new ones are being introduced. These programs will encourage emissions reductions using existing solutions in areas such as housing, commercial and institutional buildings, industrial plants, and transportation. A second investment of $321 million will support governments and communities in Canada in doing their part to address climate change. Finally, $250 million will be invested in the new technologies that will help reduce emissions over the longer term and seize new economic opportunities. Building on the Department's S&T expertise, a major portion of this funding will flow to NRCan as $115 million will be invested in R&D activities and at least $63 million to demonstrate new technologies in the marketplace.

Accountability for specific programs resides with individual departments, and strategic objectives for such programs are usually made available in program literature. In addition, there is a need to aggregate results from individual programs in order to assess the progress being made towards broad climate change goals such as the reduction of GHG emissions in Canada. This is a complex task, given that climate change is a very horizontal file involving many federal departments working on a wide range of aspects of the climate change issue. An inter-departmental process is currently taking place under the leadership of the Treasury Board Secretariat to develop a broad level results-based management accountability framework. Once this work is completed, NRCan will be in a better position to report on its share of these high-level outcomes and results.

New programs being introduced will be taken into account when NRCan prepares its new energy supply-demand outlook for Canada, from which a forecast of energy-related GHG emissions is derived. The outlook, expected to be published by the end of 2004, will be one of several NRCan contributions to the preparation of Canada's fourth National Report on Climate Change under the United Nations Framework Convention on Climate Change. This national report, expected to be ready by January 1, 2006, will provide a comprehensive description of climate change actions undertaken in Canada. NRCan will also continue to participate in the development of international negotiation positions on climate change.

Did you know? Energy consumption in buildings accounts for 62 Mt of GHG emissions including emissions from the generation of electricity.

Provincial and territorial governments play a key role in the implementation of actions to address climate change. NRCan participates in bilateral and multilateral discussions with provinces and territories to develop collaborative approaches to implementing mitigation measures. By the end of 2004, the Department expects that a series of memoranda of understanding will have been signed with interested provinces and territories. By 2005, the new $160 million Opportunities Envelope is expected to have become operational and providing funding towards provincial and territorial action.

More energy efficient homes and equipment – NRCan will spend $34 million (including $22 million on retrofit of existing houses, most of this in direct incentives to home owners) on initiatives and market transformation activities to improve the energy efficiency of both new and existing houses. Canadian builders and consumers will be encouraged to construct and purchase houses that are on average 30 percent more energy efficient and environmentally responsible than current Canadian building codes. NRCan will support the provision of energy evaluations that provide personalized recommendations to help homeowners improve the energy efficiency of their homes. NRCan will also offer financial incentives to homeowners who implement recommended energy efficiency improvements. Moreover, NRCan initiatives will continue to promote the production, purchase and use of more energy-efficient equipment, ranging from household refrigerators to commercial heating, ventilating and air conditioning systems (www.oee.nrcan.gc.ca).

Program areas supporting climate change objectives at NRCan ($ millions)	**Total NRCan**
Action Plan 2000 for Climate Change	82.0*
Climate Change Action Fund (CCAF)	16.8
Technology and Innovation	21.5
Emissions Reduction Package	13.4*
Forest 20/20 Greencover/Plantation Demonstration Assessment	17.0
Carbon Dioxide Capture and Storage	8.3
Ethanol Expansion Program	56.6
Green Power Incentives	12.1
Targeted Measures	85.3*
Opportunities Envelope and Reserve	12.2
Program of Energy Research and Development	61.2
Other leveraged departmental A-base funds	34.5
Total NRCan 2004-05	**420.9**

* Includes transfer payments in support of energy efficiency and alternative energy programs ($84.6M).

More energy efficient on-road transportation – In 2004-05, the Department will spend approximately $80 million (including $56.6 million funding for the Ethanol Expansion Program) on initiatives that target increased fuel efficiency and use of lower GHG emitting alternative fuels in the transportation sector through a suite of complementary initiatives. Such initiatives are among the most effective and efficient ways to reduce GHG emissions from on-road vehicles, mainly cars, light trucks and commercial trucks, which comprise over three-quarters of GHG emissions in the transportation sector. The Government of Canada is pursuing a voluntary agreement with manufacturers for a 25 percent fuel efficiency improvement in new light-duty vehicles sold in Canada by 2010. Additionally, Canadian motorists will be provided with the information and tools to help them purchase more fuel efficient vehicles and to improve vehicle use and maintenance practices. Training, technical information and incentives will be provided to commercial and municipal fleets to encourage fuel efficient maintenance and driving practices, with the goal of a 10 percent improvement in fleet vehicle fuel efficiency by 2010. NRCan will work to encourage and increase the supply and use of fuel ethanol in the transportation sector. In addition, NRCan initiatives will encourage increased production and use of natural gas powered vehicles for fleets and test the use/production of biodiesel on a commercial scale in Canada.

Did you know? Under NRCan's leadership, the Canadian Lightweight Materials Research Initiative will continue to coordinate R&D of materials and processes to reduce the weight of vehicles, thereby reducing energy consumption and GHG emissions.

Helping business and industry – NRCan will work to improve the energy efficiency of new commercial and institutional, industrial and multi-unit residential buildings so that by 2010, all new buildings in Canada are built to a standard that is 25 percent higher than the energy efficiency standard in the current Model National Energy Code for Buildings. NRCan will continue to encourage owners and operators of existing commercial businesses and public institutions to reduce operating costs and become more energy efficient through a variety of tools and services including information, financial incentives, training and advice. The goal is to achieve an average of 20 percent energy intensity savings in the retrofitted floor space of recipients of financial incentives.

Through the Renewable Energy Deployment Initiative, NRCan will continue to stimulate the demand for renewable energy technologies such as earth energy, solar hot water, solar air heating and biomass combustion systems by offering incentives to business, industry, institutions, and/or by helping to develop the industry infrastructure and creating awareness of the benefits of these technologies. By 2008, NRCan expects the installations of 1000 new solar thermal and biomass combustion systems on Canadian business and institutional facilities and of 25,000 new ground-source heat-pump systems on Canadian business and institutional facilities.

NRCan initiatives will continue to improve the energy efficiency of Canadian industry with program tools and services such as co-funded

energy audits, training, employee awareness sessions and bench marking and best practices guides. These initiatives will help Canadian industry use energy efficiency investments to reduce GHG emissions and improve competitiveness. Industries involved in NRCan initiatives have made a public commitment to achieve an average annual energy intensity improvement of one percent per annum through 1990-2005. This will be equivalent to annual energy cost savings of more than $2.8 billion.

Reducing GHG through carbon dioxide (CO_2) capture and storage – Understanding CO_2 capture and geological storage is an important aspect of maintaining our fossil-fuel energy options while we take action on climate change. The International Energy Agency Weyburn CO_2 Monitoring and Storage Project is investigating the technical and economic feasibility of CO_2 being stored in geological formations during large-scale, commercial, enhanced oil-recovery operations. The end result will be a credible assessment of the permanent containment of injected CO_2 as economically viable, environmentally responsible and socially acceptable (www.nrcan.gc.ca/es/etb/cetc/combustion/co2network/).

NRCan is one of 6 international government sponsors, 9 international corporations and 20 international research providers partnering on the four-year, $42 million first phase of the Weyburn project. The final reports for Phase I will be completed in mid-2004. During Phase II of the project, the risk/performance assessment methodologies will be refined to help determine the feasibility of CO_2 geological storage over the long term, measured in hundreds to thousands of years. The technology and understanding developed in this project will be of enormous significance to the establishment of geologic sequestration as a viable and publicly acceptable option for GHG emissions control worldwide. Also see Annexes - table 3 for details on a $7.5 million contribution in support of capture and storage projects.

R&D for technologies to support reduced GHG emissions – In Budget 2003, the Government of Canada committed $115 million over the next five years to the Technology and Innovation Initiative to accelerate R&D in longer term technologies. This amount includes $12 million from a contribution program (see annexes, table 3). Activities will focus on the following areas: cleaner fossil fuels ($40 million); energy-efficient buildings and communities, industry, and transportation ($25 million); decentralized energy production ($20 million); biotechnology ($20 million); and hydrogen ($10 million). Strategic and action plans identifying technology needs, gaps, paths forward and potential impacts for R&D activities from 2004-07 are being developed. Outside stakeholders – such as provinces, industry and academia – are invited to form partnerships with federal S&T performers to propose innovative technology projects.

Establishing emissions reduction targets for large final emitters – Under the Plan, the large final emitters are to reduce their GHG emissions by 55 Mt. This amounts to approximately a 15 percent reduction in emission intensities from the Government's business-as-usual forecast for 2010. NRCan's role is to establish targets for emissions reductions, supported by a legislative backstop (http://www.nrcan-rncan.gc.ca/lfeg-ggef/index.htm). The Department will be engaged in discussions with provinces and territories, industry, and other stakeholders through the end of 2006. Through this period, these discussions will support the development of policies and measures surrounding target allocation, emissions trading, and access to Canadian offsets, international permits and credits. The

framework legislation and associated regulations will be developed and Memoranda of Understanding (MOUs) or letters of understanding with interested companies – who meet the eligibility criteria for a covenant – will be negotiated to pave the way until the legislation is passed.

> ***Did you know?*** In November 2003, some companies from the pulp and paper industry demonstrated their long-term commitment to continuous environmental improvements by signing a MOU which outlines the approach to reducing GHG emissions intensity by an average of 15 percent by the 2008-12 commitment period. The MOU marks the first agreement with industry to implement the strategy set out in the Plan.

Federal Leadership – Through the Federal House in Order (FHIO) Initiative, the Government of Canada has set a target of 31 percent reduction in GHG emissions from its operations by 2010. The goal will be reached through additional building retrofits, more energy efficient construction, the purchase and use of more energy efficient equipment, continued fuel switching and increased use of renewable energy within government operations. Eleven key departments, together responsible for 95 percent of government GHG emissions, have reported to date more than 24 percent reduction from 1990 levels (http://www.fhio.gc.ca/).

> ***Did you know?*** NRCan is a co-champion of the inter-departmental Sustainable FHIO (SFHIO), which oversees Sustainable Development in Government Operations and FHIO initiatives. The SFHIO initiative promotes progress in six priority areas of operations, namely: energy efficiency/GHG reductions (buildings); vehicle fleet management; land use management; solid non-hazardous waste management; water conservation; and green procurement.

Moreover, the Government will expand its purchases of electricity from emerging renewable energy sources. Agreements for purchases in Ontario, Alberta, Newfoundland and New Brunswick should be in place by March 2005.

Air quality – Because of the significant impact Canada's energy sector has on air quality, NRCan will continue to provide energy-related policy advice on the formulation and review of Canada-wide standards for ozone, particulate matter and mercury. The form and extent of Canada-wide standards will have a profound influence on utility investments in emission-control technology in the short term but, perhaps more importantly, help shape Canada's energy mix in years to come.

NRCan will also continue to support the bi-national dimension of our clean air efforts with the United States. A Particulate Matter Annex, similar to the Ozone Annex already negotiated between the two countries, is being considered and Canada will be participating in these discussions in the following year. In addition, NRCan will be involved in three pilot projects under the recently launched Canada-U.S. Border Initiative. More specifically, we will be supporting the exploration of a cross-border emissions trading scheme for SO_2 (sulphur dioxide) and NO_x (nitrogen oxides) - two key contributors to smog and acid rain. Many climate change programs can have significant benefits to clean air as well, and NRCan is leveraging its climate change investments in a host of energy efficiency programs and others to improve air quality.

Adapting to a changing climate – NRCan is responding to growing interest in the impacts of, and adaptation to, a changing climate ($8.3 million contribution). The Department will continue assessing the vulnerabilities of six

communities across Canada to a variety of climate change impacts. Projects involve community planners and other stakeholders and address issues such as sea level rise, permafrost degradation in the North, and drought in the prairies. It is anticipated that project results will be available in 2006 to help plan adaptation actions.

Did you know? With financial assistance from the Canadian International Development Agency, NRCan is in the process of transferring High-Volume Fly Ash concrete technology to India, where it will help to reduce the 80 million tonnes of carbon dioxide currently emitted by Indian manufacturers of cement. Fly ash, a waste by-product of coal-fired power plants, is used to replace up to 60 percent of Portland cement, an essential ingredient in concrete. This results in the reduction of almost one tonne of carbon dioxide for each tonne of cement replaced.

NRCan co-leads intergovernmental initiatives to identify approaches to addressing adaptation in a cooperative, collaborative manner. The Climate Change Impacts and Adaptation Research Program will fund more than 80 research projects that will better define our vulnerabilities in natural resources, communities, health, tourism and transportation. Eight projects, which were completed in 2003-04, provide new insights on water resources management in a changing climate. The Program will also deliver a national conference on impacts and adaptation as well as undertaking partnerships with key professional organizations to examine how to incorporate future climate change in their community of practice. C-CIARN, the Canadian Climate Impacts and Adaptation Research Network, with a membership currently exceeding 2500 researchers and decision-makers, will continue to build engagement on this issue, particularly among practitioners of social and economic sciences (http://adaptation.nrcan.gc.ca).

GHG emissions reduction through national forest-related initiatives – In August 2003, NRCan received $20 million over two years to demonstrate and assess the potential role of fast growing plantations to help address climate change. The Forest 2020 Plantation Demonstration and Assessment (PDA) Initiative will evaluate and develop options that could attract investment, both internationally and domestically, into future Canadian plantations, by taking advantage of the combined benefits of both wood fibre and carbon values. The initiative will also establish a series of plantation sites to test and improve the biological information and demonstrate that fast-growing trees can help offset greenhouse gas emissions.

As part of Forest 2020's delivery framework, in 2004-05, NRCan will be conducting an analysis of the range of options for investment vehicles to attract private sector funds. It will also carry out the preparatory work for establishing fast-growing plantations across Canada, as well as beginning the planting of trees on suitable sites. Plantation demonstration site preparation and planting activities will be conducted in the spring and fall of 2004.

Under the Plan, the Feasibility Assessment of Afforestation for Carbon Sequestration (FAACS) initiative is exploring the feasibility of large-scale afforestation as an effective response to Canada's climate change commitments. The main focus is to carry out

information collection and land assessment research on privately owned lands as well as help set up the required carbon measurement and accounting infrastructure to support Canada's Kyoto Protocol reporting requirements. Canada's carbon budgeting and accounting activities that build on NRCan's Carbon Budget Model will enable Canada to meet its international reporting requirements under the Protocol.

Key FAACS activities currently underway include the collection of biophysical and economic information and the development of analytical models to estimate future afforestation and carbon sequestration impacts. In partnership with provincial government, industry and forestry associations, five afforestation pilots have also been established across Canada to test the responsiveness of landowners to a range of incentives to expand forest cover in Canada for climate change and economic benefits. Information collection activities and model development research will continue to be a priority in early 2004-05. The information will be used to develop policy recommendations on the feasibility of afforestation in Canada and the policy analysis of the Forest 2020 PDA initiative. A final report will be prepared for March 2005.

Did you know? NRCan will participate in the examination of how best to implement the Marrakech Accords' definition of forest management, as well as assessing the risks and benefits of including forest management as part of Canada's Kyoto accounting. Moreover, the Department is involved in evaluating offset design system options as part of a domestic emissions trading system.

Through its S&T programs, NRCan will continue to develop forest management tools and techniques to assess the impacts of climate change on Canada's forests and to develop resulting mitigation/adaptation strategies. These consist of:

- research activities regarding forest ecosystems carbon cycle/budget, biodiversity, productivity and growth, and natural disturbance regimes;
- programs to predict the frequency and intensity of forest fires, pests, diseases and extreme events; detection of changes in forest land cover and forest compositions;
- remote sensing and related techniques to investigate tree line responses to climate change; and
- social and economic studies.

Did you know? Over the next two years, NRCan will spend over $4 million on the Minerals and Metals Program of Action Plan 2000 to promote the increased use of alternative and recycled materials and to identify opportunities to further minimize GHG emissions through the adoption of new technologies and process modifications. Products made from recycled materials consume only a fraction of the energy used to produce the same materials from raw materials. Recycled aluminium takes only 5 percent of the energy used to produce aluminium from ore. NRCan's research is finding ways to recycle metals containing more impurities than was previously possible and is uncovering new ways to add value to recycled metals.

Developing our resources sustainably – Government and industry require geoscience knowledge to develop national and international policies concerning metals and their occurrence in the environment, and to formulate regulations for Canada. Metals occur in variable concentrations in the environment as the result of both natural processes and human activity. Certain forms of some metals can pose a risk to the health of humans and the environment. Therefore, understanding the natural background levels of metals, such as mercury, cadmium, lead and arsenic in the

environment, is essential to risk management and environmental stewardship.


Lab for vertical sectioning of lake sediments.

Through its Metals in the Environment Program (MITE), NRCan will be contributing to the Canadian Water Quality Guidelines for the Protection of Aquatic Life which will be published by the Canadian Council of Ministers of the Environment (CCME). In the planning year, MITE will also release geochemical data and background interpretative information to increase public awareness through the National Atlas of Canada. NRCan anticipates spending $250,000 from A-base, $160,000 from the Program of Energy Research and Development with expected leveraging of $220,000 from OGDs. Additional information on MITE is available at www.nrcan.gc.ca/ess/themes/env_e.php.

Developing strategies and tools to protect Canada's forests and enhance productivity – NRCan will continue to develop safe and effective deployment strategies for biotechnically-derived products through the provision of scientific expertise and advice to ensure environmental safety, by promoting science-based regulations, and by increasing public awareness of the benefits and costs of forest biotechnology. In 2004-05, specific developmental opportunities will be explored in the area of value-added bioproducts such as biomass for efficient carbon-neutral energy production, chemicals and resins of pharmaceutical and industrial interest.

Despite increased detection efforts at ports of entry and collaborative efforts between federal, provincial and municipal natural resources, environmental, and health agencies, the frequency of invasive insect entry continues to occur at an unacceptable rate. To address this issue from a policy perspective, NRCan, in collaboration with the Canadian Food Inspection Agency (CFIA), will develop a national strategy on forest alien invasive species, including the integration of environmental, economic and social risks. The strategy will aim at: enhancing supporting research for policy development in controlling alien invasive species; enhancing the capacity for information gathering and synthesizing invasive pest information; improving assessments of the impacts of exotic pests on forests, municipalities, trade and biodiversity; and, enhancing mitigative and preventative measures against alien invasive insects.


Pest management – Mountain Pine Beetle

From an on-the-ground pest management perspective, NRCan will continue to: work with the CFIA and the province of Nova Scotia on the survey and eradication program of the brown spruce longhorn beetle infesting red spruce trees in the Halifax area; work with the CFIA and Ontario Ministry of Natural Resources officials to develop options to address the outbreak of the Asian Longhorned

Beetle discovered in maple trees of the Toronto area; work with the city of Windsor and neighboring municipalities in the eradication of the Emerald Ash Borer found in ash trees; and as part of the $40 million five year Mountain Pine Beetle Initiative (MPBI) to combat this indigenous pest – which includes a contribution of $5.9 million – NRCan will work with staff at the University of Northern British Columbia to promote the integration of science with the operational realities of forest land and beetle management.

Long-term management of nuclear fuel waste –The *Nuclear Fuel Waste Act* provides the framework for the selection and implementation of an approach for the long-term management of nuclear fuel waste that is safe, environmentally sound, comprehensive, cost-effective and in the best interests of Canadians now and in the future. Through its Nuclear Fuel Waste Bureau (http://www.nfwbureau.gc.ca), NRCan will continue to support the Minister in discharging his responsibilities under the Act to oversee, monitor, review, comment on and approve, or have approved by the Governor in Council, long-term nuclear fuel waste management activities.

Did you know? In March 2001, the Minister of NRCan and local municipalities signed an agreement that initiated a $260-million, 10-year process that will lead to the cleanup and long-term management of over one million cubic metres of low-level radioactively-contaminated soils in the southern Ontario communities of Port Hope and Clarington. The process is being carried out in three phases: the current environmental assessment and regulatory review phase (2001-07), an implementation phase (2007-11), and a long-term monitoring phase.

Pursuant to the Act, the nuclear energy corporations (Ontario Power Generation, New Brunswick Power and Hydro-Québec) established the Nuclear Waste Management Organization (NWMO) and, along with Atomic Energy of Canada Limited, established trust funds to finance the implementation of the long-term waste management solution. The NWMO must submit annual reports and an options study on proposed approaches for the long-term management of nuclear fuel waste by November 15, 2005. Once the Minister of NRCan is satisfied with the study, the Governor in Council will select an approach for the long-term management of nuclear fuel waste in Canada, and the NWMO will be required to implement that approach.

Concrete dry storage containers for nuclear fuel waste at Douglas Point, Ontario.

NRCan has launched an Aboriginal capacity building process on the long-term management of nuclear fuel waste to inform government decision-making on the NWMO options study. It is providing funds over three years to the Assembly of First Nations, the Métis National Council, the Congress of Aboriginal Peoples, and the Inuit Tapiritt Kanatami to allow them to consult their constituents on the issue. Each group will submit annual reports and a final report to the Minister of NRCan on the views and opinions of its constituents on the long-term management of nuclear fuel waste in Canada.

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Strategic Outcome #4 - To provide Canadians with enhanced safety and security.

Planned Expenditures
2004-05: $32.0M
2005-06: $31.1M
2006-07: $31.2M

Short to medium-term objectives	Performance Indicators*
Canadians safeguarded from natural hazards.	• Impact of NRCan's S&T on the identification, mitigation and response to natural hazards.
A national framework for spatial positioning, mapping and boundary maintenance.	• User satisfaction with aeronautical charts, the Canada Lands Survey System and the Canadian Spatial Reference System.
Safe use of explosives and pyrotechnics.	• Accident and incident rate in the explosives and pyrotechnic industries in Canada.
Enhanced safety and security in Canada's natural resources sector.	• Impact of regulatory frameworks for energy transmission, offshore development, and Canada's uranium and nuclear industry.

* Performance indicators are currently being reviewed.

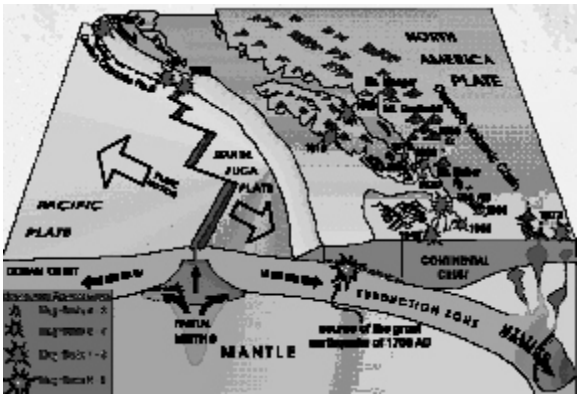
Breakdown of Planned Expenditures for 2004-05

$32 million (or 3 percent) of NRCan's total planned expenditures of $1,093 million will be spent on strategies that provide Canadians with safety and security in the natural resources sector. Programs regarding the security of our resources, explosives research, and geoscience knowledge make up the bulk of the spending. More details can be found on pages 9 and 10.

Key commitments

Meeting Canadians' safety and security needs – NRCan provides the geoscientific and geospatial information and expertise necessary to understand natural hazards in Canada, thereby assisting in mitigating and reducing the potential loss of life and economic costs of natural disasters. The Department's relevant expertise and capabilities are increasingly also being channelled into addressing security scenarios, including those related to terrorism (www.nrcan.gc.ca/ess/themes/scom_e.php).

In 2004-05, the Department will continue to monitor Canadian earthquakes, providing immediate information on their location and magnitude to media and emergency preparedness agencies for their rapid response. Similar services will be continuing related to magnetic field disturbances, especially those categorized as magnetic storms with the potential for major disruptions to vital electrical power transmission and telecommunications operations.



Block diagram of southwest B.C. showing the Juan de Fuca plate descending beneath North America along a subduction zone.

Knowledge of landslides and their prevention is important to a wide range of stakeholders, from governments, planning agencies, construction firms and the Canadian public. NRCan, in collaboration with its U.S. counterpart, will publish a Best Practices Handbook for Landslide Hazard Mitigation. Based on the Canadian and American experience, it will have application worldwide, and will be translated in several languages in the coming few years. Of particular importance to planners will be the new National Landslide Database for Canada, incorporating data from various government and non-government agencies on all types of terrain disturbances across the country. By year's end, this new knowledge will be accessible as a prototype, digital, interactive web-based inventory to be used as planners and builders undertake new housing or infrastructure development.

Did you know? A joint Canada-U.S. Power Outage Task Force was established to identify the causes of the August 2003 power outage and make recommendations on what needs to be done for prevention. Following the release of the final report, the task force will implement any recommended actions during 2004-05.

NRCan is experienced in conducting airborne surveys and publishing maps of the radiation emanating from crustal rocks as an important tool for the exploration industry in its continuing quest for new deposits of certain economic minerals. Under the new federal Chemical-Biological-Radiological/Nuclear Research and Technology Initiative (CRTI), this capability is now being refined for the detection and mapping of possible radiation contamination resulting from an act of terrorism. For this purpose, four new airborne and vehicle-borne mobile monitoring systems will be developed and field tested in the planning year. Their efficiency will be demonstrated through production of maps and digital data in real-time in exercises organized by CRTI and other agencies, resulting in a manual of new procedures and protocols to guide immediate responses.

Did you know? The safety of British Columbia's Sea to Sky highway is under increased scrutiny in planning for the 2010 winter Olympic Games. NRCan will complete a landslide hazard assessment of this corridor and release a hazard map to be used by provincial and municipal governments and emergency agencies in their development and adaptation strategies for this event. Moreover, NRCan will expand its landslide knowledge to help mitigate possible future disasters such as the Alberta "Frank slide".

Moreover, under the Smart Border Declaration, NRCan conducts joint vulnerability assessments of shared critical energy infrastructure along the Canada/U.S. border. The multi-year plan of the project involves the assessment of dams, electrical transmission lines, and oil and gas pipelines. The objective is to gain an understanding of the system vulnerabilities so that appropriate risk management measures can be taken to enhance the security posture of energy facilities as part of the National Critical Infrastructure Assurance Program. Another key aspect of this

work will be continuing to develop an information sharing process on threats to the energy infrastructure to meet the needs of industry.

With respect to nuclear liability, NRCan is in the final stages of the review of the *Nuclear Liability Act* (NLA). Proposed revisions will overhaul the current legislation governing civil liability for nuclear accidents and replace it with a modern regime that better addresses public interests and reflects international norms in this area. Improving the compensation scheme provided for under the NLA is the most important goal of its revision. A key issue is to update the current $75 million liability limit for nuclear power generating plants, to reflect inflation and international standards. In addition to that is an examination of the means by which the future liability amount can be kept up to date and revised in a simple manner. This new Act will complete the government's objective of modernizing Canada's nuclear legislative and regulatory regimes, following the development and implementation of the *Nuclear Safety and Control Act* in 2000 and the *Nuclear Fuel Waste Act* in 2002.

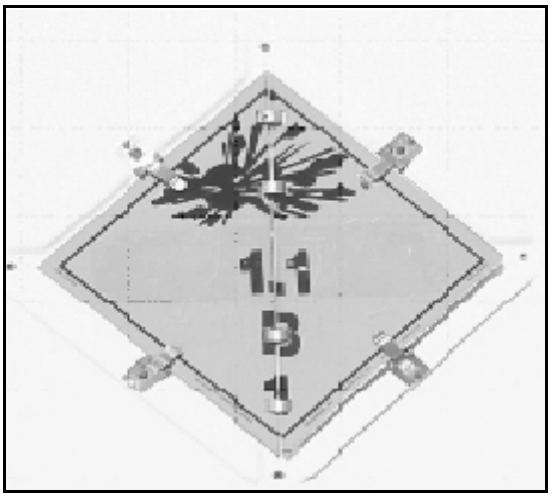
Enhancing security of Canadians through tighter explosives control and pipeline monitoring – To protect the Canadian public from terrorist use of explosives, the government needs reliable technologies to detect explosives and to make buildings more resistant to explosions.

Did you know? Over the past decade, mining underwent explosive growth in productivity, largely as a result of the increased use of automated processes and vehicles underground. Most underground vehicles are powered by diesel but diesel particulate matter can be harmful to mine workers. NRCan is exploring new applications for fuel cell and hybrid vehicles underground. The substitution of hybrid and fuel cell technologies in underground vehicles will maintain the international competitiveness of Canada's mines while protecting worker health. There is an added benefit that, unlike diesel, hybrid and fuel cell technologies also produce far fewer or no CO_2 emissions.

NRCan is expanding its efforts to enhance the security of Canada's explosives supply in partnership with other government departments. NRCan's explosives activities have traditionally been in the safety area and it will continue to ensure that the authorization, manufacture, importation, storage, transportation and possession of explosives are effectively regulated and supported by sound science. However, work in explosives has increasingly taken on a security aspect since September 11th, 2001, and there will be a major effort over the next three years to support new initiatives, such as tighter controls on the possession of explosives and their precursors. Indeed, a requirement exists to better ensure that pipelines and other infrastructure are secure. NRCan is also expanding its security-related scientific work on the mitigation of blast effect and improvements to explosives detection and identification. Progress on new regulations related to explosives security will require the passage of a public safety act.

NRCan will also continue to help improve health and safety in the natural resource sectors, for example, through research on systems to monitor and maintain the integrity of pipelines and safety in the underground mining industry, and through the development and implementation of related national and

international standards. Moreover, administration of the Canada-wide program to certify personnel for non-destructive testing remains a priority.



NRCan plays an important role in protecting Canadians from the unsafe or illegal use of explosives, pyrotechnics and fireworks.

NRCan's initiatives will result in the following outcomes:

- explosives are classified and authorized;
- equipment for use in hazardous locations is certified;
- regulations and necessary means to implement a public safety act are developed;
- certificates to possess explosives and regulations to control the sale of consumer quantities of explosives precursors (such as ammonium nitrate, which can be easily used to manufacture explosives) are introduced;
- counter-terrorism measures of a convention of the Organization of American States are fulfilled (see www.nrcan.gc.ca/mms/explosif/over/over_e.htm for information on NRCan's explosives regulatory activities);
- advanced systems to monitor and maintain oil and gas pipelines are developed (see www2.nrcan.gc.ca/mms/picon/main_e.asp for information on NRCan's work to date); and
- research is implemented to address rock bursts, ventilation, hoist inspection and other safety issues in underground mining. (see www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/mines/control/control-e.htm for information about NRCan's current research program).

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Strategic Outcome #5 - To provide Canadians with a department that is efficiently and effectively managed.

Planned Expenditures
2004-05: $59.5M
2005-06: $60.0M
2006-07: $57.1M

Short to Medium-term Objectives	Performance Indicators*
Managing NRCan's resources responsibly.	• Employee satisfaction with NRCan management practices. • Progress towards maintaining and enhancing NRCan's program integrity. • Savings realized from streamlining administrative processes, innovative service delivery, electronic commerce, improved facilities management, and information technology bulk purchasing and contracts.
Continuous improvement of NRCan's products, services, and operations.	• Implementation of recommendations from audits, evaluations and other studies of NRCan management and operations. • Progress towards the implementation of leading-edge management practices.
Sustainable development in NRCan operations.	• Progress of the Department's Environmental Management System towards the implementation of ISO 14000 series of standards. • Progress towards the implementation of environmental health and safety audits and environmental assessment evaluation of NRCan operations. • Amount of solid non-hazardous waste from NRCan operations per capita per year. • Portion of fleet converted to alternative fuels. • Rate of purchasing by NRCan of green power.

* Performance indicators are currently being reviewed.

Breakdown of Planned Expenditures for 2004-05

$59 million (or 5 percent) of NRCan's total planned expenditures of $1,093 million will be spent on providing Canadians with effective and efficient support to NRCan's programs. More details can be found on pages 9 and 10.

Key Commitments

Advancing modern management – Treasury Board recently introduced a Management Accountability Framework to translate the vision of modern public service management into a set of management expectations. Given that modern comptrollership already deals with seven of the ten elements of the framework, NRCan is already well underway to meeting these management expectations and is aligned with government-wide directions. Over the planning period, NRCan will update its corporate costing model, continue the implementation of the Information-

Governance Project, and will continue to develop:

- an integrated security system to better respond to emergency situations;
- a priority setting model to help in decision-making on management project selection;
- a tool kit that will clarify accountability for the management of information and financial resources;
- guidelines for a corporate transfer payments (grants and contributions) monitoring system;
- a corporate risk profile; and
- a comprehensive Environmental Management System to minimize environmental risk.

Improving our capacity to support program, science delivery and management functions – In April 2004, NRCan will begin implementing recommendations from its Support Services Study. The objective of the Study is to strengthen the effectiveness and efficiency of service functions in support of program delivery and strategic outcomes.

Study recommendations will begin to address issues such as:

- the multiplicity of organizational units delivering support services;
- the considerable efforts by many individuals dispersed across many processes; and,
- better leveraging of IM/IT investments.

NRCan will continue to encourage service improvement across the Department in response to the Treasury Board's Service Improvement Initiative (SII). Client satisfaction initiatives are further supported by ISO 9000 frameworks in some 18 parts of the Department, the Client/Stakeholder Focus element of the *NRCan Guide to Good Management*, and the departmental Excellence initiative. The Office of Energy Efficiency and Corporate Services Sector recently conducted two of the larger surveys to establish a baseline of client satisfaction and obtain data for specific improvements for the coming year.

Measurement initiatives are gradually aligning with the Common Measurement Tool (CMT). The plan is to build on our successes by developing a more comprehensive satisfaction baseline, based on the CMT, for all of our core client services and for all applicable channels of service delivery. The Department will develop performance measurement indicators for this initiative for future reports.

Moreover, NRCan is undertaking a full review of its current suite of 36 performance indicators and will publish a complete listing and reporting schedule in the 2005-06 RPP. For the 2003-04 Departmental Performance Report, NRCan will report against the following indicators:

- user satisfaction with relevance, accessibility and quality of information;
- participation in, and influence on, national and international multi-stakeholder approaches to sustainable development issues;
- number of shared projects and funds leveraged with rural, Aboriginal and northern communities;
- GHG emissions compared to Kyoto protocol;
- trends in energy efficiency;
- environmental influence of NRCan's S&T and stewardship practices;
- impact of NRCan's S&T on the identification, mitigation and response to natural hazards; and
- NRCan is a productive, healthy and sustainable workplace.

Building a strong and diverse workforce – Challenges related to impending staff retirements present opportunities to invest in new skill sets needed for the future through specific recruitment and development programs. In this regard, a human resources planning model is being developed to help managers better integrate their human resources needs with their business planning requirements.

Equally important, the Department invests in its employees by encouraging an atmosphere of continuous learning through a Leadership and Management Continuum consisting of:

- a management development and assignment program;
- a supervisor orientation program;
- e-mentoring; and,
- an orientation program for new employees.

NRCan is committed to meeting the objectives of its 2002-05 Employment Equity Action Plan and the government's official languages policy. In this regard, employment equity objectives will be revised to reflect 2001 census results. An action plan will be developed to support employees in acquiring competence in both official languages.

With the passage of the *Public Service Modernization Act* in November 2003, priority will be given to work more closely with the bargaining agents to enhance the consultation relationship and design, and implement a conflict management system to more effectively resolve workplace issues.

Effective management and delivery of departmental S&T – The 2003 S&T Futures Study identified several challenges and opportunities for effective S&T management and delivery within NRCan http://www.nrcan.gc.ca/dmo/scitech/. In response to the Study, NRCan established the Office of the Chief Scientist ($1.5 million) to provide departmental leadership in the implementation of the Study recommendations including:

- development of an S&T vision, mission and effective governance structure for NRCan;
- improvement of departmental S&T information to demonstrate S&T results for Canadians;
- development of innovative options for pooling of capital resources and sharing of facilities and equipment; and,
- integration of S&T efforts across departments to better focus on priorities.

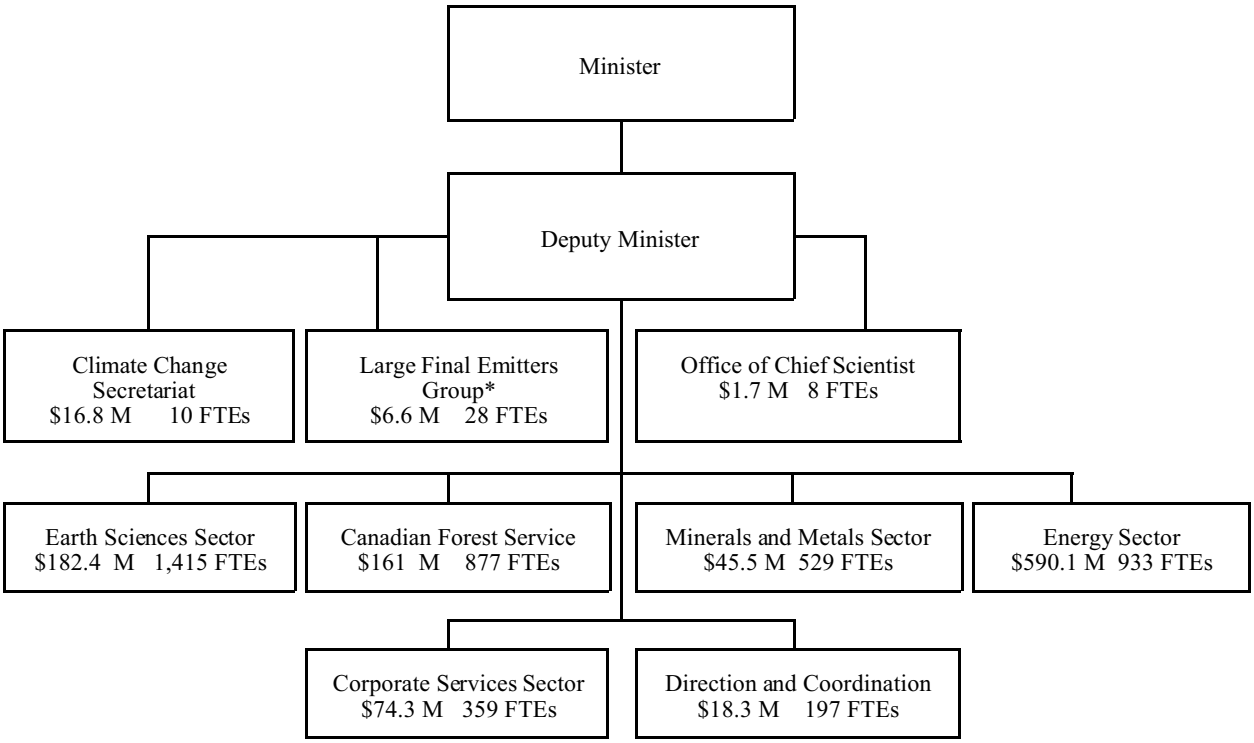
Space at 555 Booth Street is being better utilized to permit eventual decommissioning of older buildings such as 550 and 552 Booth Street.

Moreover, to address major challenges involving the Department's aging real property base, a long-term accommodation strategy is being developed for the National Capital Region where a majority of the deteriorated assets are located. This effort will provide direction to ensure the future sustainability of departmental holdings by replacing, renovating or divesting real property as required. In the meantime, capital deficiencies will continue to be addressed through the delivery of the final phases of the approved $49 million Program Integrity plan.

IV Organization

Accountability – NRCan delivers on its strategic outcomes and objectives with strong internal interdependency and sharing of knowledge and expertise across its organizational groups and sectors that report to the Deputy Minister.

1. Organization Chart and Planned Spending for 2004-05



* Large Final Emitters Group includes $3.8M above NRCan reference levels to be transferred from Environment Canada during 2004-05.

The **Earth Sciences Sector** is an organization aligned with government priorities and linked with other parts of Canada's innovation system. Its programs are an essential component of the S&T Canadians need to make informed economic, social and environmental decisions. It extends logistics support to Arctic science through the Polar Continental Shelf Project. Geomatics Canada, Canada's national mapping agency, provides geographic information of Canada's landmass and offshore including topographic maps and aeronautical charts, legal surveys of Canada Lands, geodesy for accurate positioning, and the archiving and application of earth observation data. Through their offices and labs across Canada, the Geological Survey of Canada provides the framework for mineral and petroleum exploration, helps Canadians mitigate the impact of hazards such as earthquakes and toxic substances in the environment, and contributes to climate change science, impacts and adaptation. Policy analysis, development and coordination is provided to support the Sector's mandate.

The **Canadian Forest Service** promotes the sustainable development of Canada's forests and the competitiveness of the Canadian forest sector for the well-being of present and future generations of Canadians. As the premier forestry S&T research and national policy coordination agency in Canada, the Canadian Forest Service plays a pivotal role in building a consensus on key forest issues, shaping national and international forest agendas, and generating and transferring knowledge through its world-class forestry research. Its policy development, S&T research, and programs are delivered through a headquarters establishment and five national science research networks operating out of five forestry research centres located across Canada.

The **Minerals and Metals Sector** promotes the sustainable development of Canada's minerals and metals resource industries by integrating economic, social and environmental objectives. It provides policy advice, S&T, and commodity and statistical information to support decision-making. It is also the federal government's primary source of expertise on explosives regulations and technology. The sector promotes globally the safe use of minerals and metals, as well as the application of sound science to decisions involving minerals and metals, and facilitates the development of domestic and international partnerships to address important challenges concerning the responsible development and use of minerals, metals and their products.

The **Energy Sector** fosters the sustainable development and responsible use of Canada's energy resources to meet the present and future needs of Canadians. It focuses on S&T, policies, programs, knowledge and international activities in the areas of energy efficiency, renewable energy, alternative transportation fuels, and conventional energy to further sustainable development. Through its work, the sector helps address the climate change challenge, promotes better environmental and consumer choices, facilitates North American and international trade in energy, contributes to technical innovation, job creation and economic growth, facilitates environmental protection and increased public safety and security, and helps to ensure competitively priced, reliable and secure energy supplies for Canadians.

The **Corporate Services Sector** provides timely and reliable advice, products and services to support clients in achieving NRCan's objectives. The Sector is committed to providing leadership to the Department in the following functional areas of expertise: financial management; information management; human resources management; workplace well-being; environmental affairs; security, safety and emergency management; contracting and procurement; information technology; real property; and selected departmental services.

Direction and Coordination provides services to the Department's Executive Offices through the following branches. The **Corporate Policy and Portfolio Coordination Branch** provides a corporate policy and portfolio-wide coordination function which is responsive to evolving priorities thereby enabling it to provide timely and substantive advice to the Minister and Deputy Minister; it also enhances the contribution of the Natural Resources Portfolio within government and advances horizontal linkages across government with respect to the federal role in the sustainable development of natural resources. The **Audit and Evaluation Branch** provides senior management with independent, objective professional advice and assurances on the performance of management frameworks, departmental programs, policies and operations, and on risk management. The **Communications Branch** leads departmental communications in support of the

Minister, government priorities and the natural resources sector; it provides advice for internal and external audiences. **Legal Services** provides day-to-day legal advice and guidance to ensure that NRCan's activities, policies and operations are consistent with the law, regulations and with high ethical standards.

The **Large Final Emitters Group** (LFEG) is responsible for working with key industry sectors to establish reduction targets for greenhouse gas emissions. Through its discussions with industry, provinces and territories, and other stakeholders, the LFEG designs policies and legislative measures that are effective in encouraging reductions, are administratively efficient and clear, and help to maintain the competitiveness of Canadian industry.

The **Office of the Chief Scientist** (OCS) champions science on behalf of the Department, communicating the complexity and scope of NRCan's S&T to internal and external audiences. It is leading the process of strategic assessment and change of the departmental S&T mission, and is responsible for attaining exceptional standards in the quality of science; creation of innovative partnerships and models of S&T delivery; S&T information management; intellectual property management, knowledge integration and dissemination; linking S&T with policy and program priorities; development and implementation of horizontal management and governance systems; and, creating fiscal flexibility and opportunity in S&T. **NRCan On Line (NOL) Secretariat** is leading the Department-wide initiative to improve and transform service to citizens, clients and employees using all channels (mail, kiosks, Internet, in-person and telephone). The Secretariat is promoting the integration of natural resources information and knowledge to support sound decision making.

With the December 2002 ratification of the Kyoto Protocol and the sun-setting of the Climate Change Action Fund (CCAF) at the end of March 2004, the **Climate Change Secretariat** will be winding down its operations in 2004-05. Its main functions will be to complete its responsibilities with respect to the CCAF and Action Plan 2000, and negotiate remaining bilateral MOUs with interested provinces and territories. The Secretariat reports to the Deputy Ministers of NRCan and Environment Canada.

2. Planned Spending Crosswalk by Strategic Outcome and Sector for 2004-05 ($ millions)

	Natural Resources Canada Sectors						
Strategic Outcome	Earth Sciences [1]	Canadian Forest Service	Minerals and Metals	Energy	Corporate Services	Direction and Coordination	**Total**
Information Dissemination and Consensus Building	95.0	64.4	5.3	10.4	9.8	0.0	**184.9**
Economic and Social Benefits	49.4	65.1	19.1	205.4	9.5	0.0	**348.5**
Environmental Protection and Mitigation	24.9	32.8	21.3	379.0	12.5	16.8	**487.3**
Safety and Security of Canadians	15.8	1.2	8.5	6.8	3.1	0.0	**35.4**
Sound Departmental Management	0.0	0.0	0.0	0.0	39.6	20.0	**59.6**
Total available authorities	**185.1**	**163.5**	**54.2**	**601.6**	**74.5**	**36.8**	**1,115.7**
Less respendable revenues	(2.8)	(2.5)	(8.7)	(8.7)	(0.1)	0.0	**(22.8)**
Approved reference levels	**182.3**	**161.0**	**45.5**	**592.9**	**74.4**	**36.8**	**1,092.9**

1. Earth Sciences Sector figures include the Geomatics Canada Revolving fund ($2.4 M).

3. Departmental Planned Spending

(millions of dollars)	Forecast Spending 2003-04	**Planned Spending 2004-05**	Planned Spending 2005-06	Planned Spending 2006-07
Budgetary Main Estimates				
Information Dissemination and Consensus Building	164.1	**184.9**	159.7	159.2
Economic and Social Benefits	269.1	**348.5**	576.8	857.1
Environmental Protection and Mitigation	311.7	**487.3**	477.3	289.8
Safety and Security of Canadians	36.3	**35.4**	34.6	34.6
Sound Departmental Management	52.9	**59.6**	60.1	57.2
Budgetary Main Estimates (gross)	834.1	**1,115.7**	1,308.5	1,397.9
Less: Respendable Revenue	(22.0)	**(22.8)**	(21.9)	(21.9)
Total Main Estimates	812.1	**1,092.9**	1,286.6	1,376.0
Adjustments:				
Budget 2004	0.0	130.0	13.0	5.0
Other TB approvals post 2004-05 ARLU	0.0	7.3	7.3	0.7
2003-04 Supplementary Estimates (A)	127.1	0.0	0.0	0.0
2003-04 Supplementary Estimates (B)	246.6	0.0	0.0	0.0
Total Adjustments	373.7	137.3	20.3	5.7
Net Planned Spending	1,185.8	**1,230.2**	1,306.9	1,381.7
Less: Non-respendable revenue	83.3	**150.3**	474.3	700.3
Plus: Cost of services received without charge	34.7	**38.0**	35.4	34.7
Net cost of Program	1,137.2	**1,117.9**	868.0	716.1
Full-Time Equivalents (FTEs)	4,301	**4,356**	4,389	4,221

In 2004-05, major increases in main estimates are due to projects within the Emissions Reductions Package ($114.6M), supporting our commitment to sustainable development and use of energy resources. In 2003-04, Emissions Reductions, Forest 2020/Greencover and related climate change initiatives add $127.1M via the supplementary estimates. Budget 2004 items include the grant to Sustainable Development Technology Canada ($100M), Nova Scotia Offshore Revenue Account ($8M) and the Seabed Mapping Project ($5M).

As offshore oil exploration and production increases in the Atlantic, our revenue funds and accounts used to flow through royalties and forfeitures will increase by $249.8M in 2003-04 (via the supplementary estimates) and by $101.8M in 2004-05. These increases are offset by corresponding increases in non-respendable revenues, as NRCan acts as a flow-through entity collecting royalties to distribute to Newfoundland and Nova Scotia through statutory contribution programs (see tables 1, 2 and 5 in the annexes). These increases are forecasted to continue into 2006-07.

Annexes - Financial Information

1. Departmental Summary: Main Estimates Part II ($ millions)

Vote		**Main Estimates 2004-05**	Main Estimates 2003-04
1	Operating Expenditures	**578.8**	524.7
5	Capital Expenditures	**12.7**	10.7
10	Grants and Contributions	**289.8**	173.8
(S)	Minister of Natural Resources - Salary and Motor Car Allowance	**0.1**	0.1
(S)	Contributions to Employee Benefit Plans	**58.4**	52.2
(S)	Canada-Nova Scotia Development Fund	**1.6**	1.1
(S)	Canada-Newfoundland Development Fund	**1.4**	1.6
(S)	Canada-Newfoundland Offshore Petroleum Board	**3.6**	3.5
(S)	Canada-Nova Scotia Offshore Petroleum Board	**2.5**	2.2
(S)	Payments to the Nova Scotia Offshore Revenue Account	**30.0**	18.0
(S)	Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund	**116.4**	26.6
(S)	Geomatics Canada Revolving Fund	**(2.4)**	(2.4)
	Total NRCan	**1,092.9**	812.1

2. Summary of Transfer Payments

Grants and contributions make up $445.3 million or 41 percent of the total budgetary planned spending of the Department (2004-05 Main Estimates). The figures below summarize all grants and contributions planned spending.

($ millions)	Forecast Spending 2003-04	**Planned Spending 2004-05**	Planned Spending 2005-06	Planned Spending 2006-07
GRANTS				
Information Dissemination and Consensus Building	1.2	**0.2**	0.2	0.2
Economic and Social Benefits	0.3	**0.3**	0.3	0.3
Environmental Protection and Mitigation	0.3	**18.0**	24.0	10.1
Safety and Security of Canadians	0.0	**0.0**	0.0	0.0
Sound Departmental Management	0.1	**0.1**	0.1	0.1
Total Grants	1.9	**18.6**	24.6	10.7
CONTRIBUTIONS				
Information Dissemination and Consensus Building	12.8	**16.1**	10.5	10.8
Economic and Social Benefits	82.4	**62.5**	43.8	35.7
Environmental Protection and Mitigation	75.8	**191.8**	190.5	78.5
Safety and Security of Canadians	0.2	**0.2**	0.2	0.2
Sound Departmental Management	0.1	**0.6**	0.6	0.6
Sub-total Voted Contributions	171.4	**271.2**	245.6	125.8
Total Vote 10 Grants and Contributions	173.3	**289.8**	270.2	136.5
Statutory Contributions	52.9	**155.5**	415.1	702.8
Total Grants and Contributions	226.2	**445.3**	685.3	839.3
Plus: Adjustments to Planned Spending*				
Grants	129.9	**100.0**	0.0	0.0
Contributions*	328.9	**25.0**	8.0	0.0
Total Planned Grants and Contributions	685.0	**570.3**	693.3	839.3

* $250M of the increase in 2003-04 is explained increasing statutory contributions offset by non-respendable revenues due to royalties and revenues collected in the offshore oil fields of Newfoundland and Nova Scotia. Please see related statutory payments in table 1 and revenues in table 5. Other significant items include the special grant to Sustainable Development Technology Canada (SDTC) for $125M, Climate Change Action Plan accounts for another $79M, and a reduction of $108M for reprofiling. Budget 2004 announced $100M for SDTC and $25M for Nova Scotia Offshore Revenue Account in 2004-05.

3. Details of Transfer Payment Programs which exceed $5 million in 2004-05

Long-Term Strategic Outcome #1: Information Dissemination and Consensus Building
Short to Medium-Term Objectives: (i) easily accessible and integrated knowledge on the state of Canada's landmass and natural resources, and the economic, environmental, and social dimensions of their use; (ii) greater national and international cooperation and consensus on sustainable development issues, policies, goals and actions; and (iii) fiscal, regulatory and voluntary approaches that encourage the sustainable development of natural resources.

Transfer Payment Program	Planned Results	Anticipated Milestones
Model Forest Program ($7.5M)	See Section III, page 14, *Enhancing existing and establishing new strategic partnerships in Canada's forest sector*. On-the-ground development and testing of sustainable forest management tools, techniques, and forest practices.	See Section III, page 14, *Enhancing existing and establishing new strategic partnerships in Canada's forest sector*. Increased knowledge, national and local partnerships, and the adoption of innovative forest management practices.

Long-Term Strategic Outcome #2 – Economic and Social Benefits
Short to Medium-Term Objectives: (i) greater economic opportunities and encouraging investment in innovative and higher-value uses of natural resources; (ii) expanded access to international markets for Canadian resource-based products, knowledge, technologies and services; and (iii) increased capacity of Aboriginal, rural and northern communities to generate sustainable economic activity based on natural resources.

Transfer Payment Program	Planned Results	Anticipated Milestones
Hibernia Interest Assistance ($28.1M)	Increased investment in energy development and infrastructure, while creating jobs and protecting the environment.	A repayable contribution to assist the owners in meeting current project interest payments on the guaranteed loans, if current oil prices for the oil produced by the project fall below U.S. $25 per barrel (in 1987 dollars).
Payments to the Nova Scotia Offshore Revenue Account ($30M, plus $25M announced in Budget 2004)	To return the revenue benefits of offshore development to the province of Nova.	An amount equal to various offshore revenues, including royalties, rentals, forfeitures, fees and corporate offshore income tax (as determined by Canada Customs and Revenue Agency) through the Nova Scotia Offshore Revenue Account.
Payments to the Newfoundland Offshore Petroleum Resource Revenue Fund ($116.4M)	To return the revenue benefits of offshore development to the province of Newfoundland and Labrador.	An amount equal to various offshore revenues, including royalties, rentals, forfeitures, fees and corporate offshore income tax (as determined by Canada Customs and Revenue Agency) through the Newfoundland Offshore Petroleum Resource Revenue Fund.

Transfer Payment Program	Planned Results	Anticipated Milestones
Assistance to the Canadian softwood lumber sector ($20.1M) Canada-China Wood Products Initiative ($1.4M)	See Section III, page 21, *Enhancing the competitiveness of Canada's forest sector.*	See Section III, page 21, *Enhancing the competitiveness of Canada's forest sector.*
Measures to mitigate the impact of the Mountain Pine Beetle (MPB) epidemic ($5.9M)	See Section III, page 37, *Developing strategies and tools to protect Canada's forests and enhance productivity.*	See Section III, page 37, *Developing strategies and tools to protect Canada's forests and enhance productivity.*

Long-Term Strategic Outcome #3 – Environmental Protection and Mitigation

Short to Medium-Term Objectives: (i) Canada addressing its international Kyoto commitment to reduce greenhouse gases; (ii) scientific research, technologies and stewardship practices that reduce environmental impacts, conserve biodiversity, and increase the efficiency of resource development and use; and (iii) Canada's environment safeguarded from the risks associated with natural resource development and use.

Transfer Payment Program	Planned Results	Anticipated Milestones
In support of energy efficiency and alternative energy programs ($84.6M) - contributions ($66.6M); - grants in support of the EnerGuide for Houses Retrofit Initiative ($18M).	Improved energy efficiency and the adoption of alternative sources of energy which contribute to reducing GHG emissions. More information can be found in Strategic Outcomes 2 and 3 of this report and in NRCan's Sustainable Development Strategy at www.nrcan.gc.ca/sd-dd.	Complete the implementation of the new measures announced in August 2003 and provide continued support to energy efficiency and alternative energy programs for all end-use sectors of the economy. Information can be found in Strategic Outcomes 2 and 3 of this report and in NRCan's Sustainable Development Strategy at www.nrcan.gc.ca/sd-dd.

Transfer Payment Program	Planned Results	Anticipated Milestones
Climate Change Action Fund ($11.1M) - Technology Early Action Measures (TEAM) ($8.8M); - Impacts and Adaptation ($2.3M) reported below	TEAM will be winding down the projects funded under its first two phases under CCAF. TEAM has invested in nearly 100 projects since 1998 in support of early action to reduce GHG emissions, while sustaining economic and social development. The majority of projects are carried out over multiple years. TEAM will maintain its active role in development of GHG validation methodologies and will report on the verifiable and innovative technologies supported under its first two CCAF phases (http://www.ec.gc.ca/press/59ccaf_be.htm).	TEAM will invest in new projects under Budget 2003 Technology & Innovation demonstration component. Emphasis on TEAM/CCAF projects will be collecting final deliverables from active projects, substantiating technology and GHG performance claims and monitoring marketplace replication.
Contribution in support of carbon dioxide capture and storage projects ($7.5M)	To demonstrate carbon dioxide-based enhanced oil and gas recovery in small-scale commercial projects that are near-economic, in order to help abate the higher costs of carbon dioxide capture and storage and to facilitate the development of the carbon dioxide capture and storage market. More details can be found in Section III, page 30, *Addressing climate change and other environmental issues.*	Applications were accepted as of March 1, 2004. Individual contribution agreements will be prepared with successful applicants.
In support of organizations associated with impact and adaptation research related to climate change ($8.3M, includes CCAF funds from above)	See Section III, page 30, *Addressing climate change and other environmental issues.*	See Section III, page 30, *Addressing climate change and other environmental issues.*
Wind Power Production Incentive Contribution Program ($10.5M)	See Section III, page 17, *Promoting renewable energy and cleaner fossil fuels.*	Support the development of wind farms by providing a 1.2 or 1 cent incentive per kilowatt-hour to producers of wind electricity.

Transfer Payment Program	Planned Results	Anticipated Milestones
Contribution in support of the Technology and Innovation Initiative ($12M)	Expanded knowledge base, new technologies and regulations for climate change mitigation related to: • cleaner fossil fuels; • advanced energy-efficiency end-use; • energy-efficient decentralized energy production, distribution and use; • biotechnology; and • hydrogen production, distribution, storage and use. More details can be found in Section III, page 30, *Addressing climate change and other environmental issues*.	Strategic programs in place and R&D projects underway in partnership with provinces, industry and universities by March 31, 2005.
Contribution in support of the Ethanol Expansion Program ($56.6M)	See Section III, page 30, *Addressing climate change and other environmental issues.*	See Section III, page 30, *Addressing climate change and other environmental issues.*
Market Incentive Program ($8.5M)	Work with electricity distributors to promote the sale of electricity from emerging renewable energy sources. Also see Section III, page 17, *Promoting renewable energy and cleaner fossil fuels.*	The goal of the program is to seek proposals from electricity distributors interested in developing market based programs that will increase the sale of green power to their residential and small business customers. Invitation to proponents have been sent. The Department anticipates a number of proposals from which to select projects and enter into a contribution agreement with the party. If need be, other strategies will be developed to reach more participants.

4. Special Grants to Foundations

Sustainable Development Technology Canada (SDTC) – SDTC is an arm's-length, not-for-profit foundation created to stimulate the development and demonstration of Canadian technologies aimed at climate change and clean air. SDTC began operating in April 2002 with $100 million of federal funding from Budget 2000. As at the end of November 2003, four solicitations for Statements of Intent (SOI) had been held and, following a two-stage screening process, 27 projects were announced in three funding rounds, granting a total of $40 million. Funding ranged from $0.5 million to $2 million per project.

Budget 2003 announced $250 million in additional federal funding and Budget 2004 announced a further $200 million. A revised funding agreement covering the combined funding from Budget 2000 and Budget 2003 ($350 million in total) has been negotiated with SDTC and approved by Treasury Board in February 2004. The Budget 2003 endowment of $250 million was transferred to SDTC in March 2004. This additional funding will allow SDTC to fund larger projects. SDTC will fully commit all funding by December 31, 2007, and disburse all funds by December 31, 2009. Following a 2-year evaluation period, SDTC will submit a final evaluation report to Canada by June 30, 2012, and close its operations.

The latest endowment of $200 million, announced in Budget 2004, will require further amendments to the funding agreement, which will be negotiated over the summer of 2004. $100 million will be attributed to NRCan in FY 2004-05. Following Treasury Board approval, the funds will then be transferred to SDTC by late summer.

SDTC envisages it will continue to issue two solicitations for SOIs and have two funding announcements per annum. Over the life of its operations, SDTC will expend 80 percent of its funding on projects that are primarily climate change projects, while 20 percent will support projects that are primarily clean air projects. Furthermore, SDTC will provide at least $50 million towards projects related to the development and demonstration of technologies for the hydrogen economy and at least another $50 million towards projects related to clean fossil fuels. With the $200 million endowment from Budget 2004, the mandate of SDTC will be broadened to also include the development and demonstration of new technologies for clear water and soil.

In April 2003, SDTC published its Initial Plan - a forward looking document that describes how the Foundation intends to operate. Once the new funding agreement is in place, SDTC will publish a corporate plan in April of each year, in which it will describe its plans for the current year as well as provide a forecast for the following year. Each corporate plan will include a disbursement plan, planned administration expenditures, objectives and proposed actions, an

investment update, operating strategy and performance expectations. Summaries of these plans will be made public by the Minister, and hence will be made available to Parliament.

SDTC issued its first annual report in May 2003. It was tabled in the House of Commons by the Minister of NRCan on July 16, 2003. From here on, SDTC will publish an annual report in May of each year describing its activities during the previous year. In addition, the annual report will contain a statement of SDTC's plans for fulfilling its objectives and purposes for the next year. The SDTC website is: http://www.sdtc.ca.

Canadian Federation of Municipalities – The Green Municipal Funds (GMF) were created in Budget 2000 with an endowment to the Federation of Canadian Municipalities (FCM) from the federal government of $125 million, an amount shared equally by Environment Canada and NRCan. Budget 2001 doubled the endowment to $250 million.

The 7-year, $50 million Green Municipal Enabling Fund (GMEF) provides cost-shared grants of up to $350,000 for feasibility studies that assess the technical, environmental and/or economical feasibility of innovative environmental projects.

The $200 million Green Municipal Investment Fund (GMIF) is a permanent revolving fund that provides financing to municipal governments or their partners to underwrite the capital costs of innovative environmental municipal infrastructure projects. Grants may also be provided for highly innovative projects.

The FCM, who administers and delivers the GMF, has provided targets for fiscal 2003-04 in the 2003-04 Annual Statement of Plans and Objectives. It is anticipated that FCM will approve 65 GMEF studies for $3.5 million, and 15 GMIF projects and pilot projects for $45 million. GHG reductions will result from the development of five biomass/wood waste co-generation community energy systems, five landfill gas projects and six municipal wastewater treatment projects. GMF results will be published in the GMF Annual Report in June 2004.

Further information, including the outlines of approved projects, and reports, can be found on the FCM website at: www.fcm.ca.

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

($ millions)	Forecast Revenue 2003-04	**Planned Revenue 2004-05**	Planned Revenue 2005-06	Planned Revenue 2006-07
Respendable Revenues				
Information Dissemination and Consensus Building	2.9	**3.1**	3.0	3.0
Economic and Social Benefits	8.1	**8.5**	7.9	7.9
Environmental Protection and Mitigation	7.5	**7.6**	7.5	7.5
Safety and Security of Canadians	3.4	**3.5**	3.5	3.5
Sound Departmental Management	0.1	**0.1**	0.1	0.1
Total Respendable Revenues	22.0	**22.8**	21.9	21.9
Non-Respendable Revenues				
Information Dissemination and Consensus Building	0.2	**0.2**	0.2	0.2
Economic and Social Benefits	83.1	**150.1**	413.1	700.1
Environmental Protection and Mitigation	0.0	**0.0**	31.0	0.0
Safety and Security of Canadians	0.0	**0.0**	30.0	0.0
Sound Departmental Management	0.0	**0.0**	0.0	0.0
Total Non-respendable Revenues*	83.3	**150.3**	474.3	700.3
Total Respendable and Non-respendable Revenues	105.3	**173.1**	496.2	722.2

* Large increases in non-respendable revenues are the result of increased royalty activity in the offshore oil industry of Newfoundland and Nova Scotia. These correspond to increases in the statutory contributions noted in table 2.

6. External Charging

Name of Fee Activity	Fee Type	Fee Setting Authority	Reason for Fee Introduction or Amendment	Effective date of planned change to take effect	Planned Consultation & Review process
Earth science products and services including maps, air photos, digital data, and remote sensing (amending)	Other	*Resources and Technical Surveys Act*	Increase in costs to deliver services and products	2004-05	Publication on departmental web site prior to implementation.
Explosives Licensing (amending)	Regulatory service	*Explosives Act*	Increase in costs to provide services	2004-05	Planned stakeholder meetings have already taken place and will continue through the process.

7. Major Initiatives and/or Programs

Major Initiatives (consolidated)	Planned Spending ($ millions)			Strategic Outcome	Planned Activities	Expected Results
	2004-05	2005-06	2006-07			
Providing science, technology and innovation support for the sustainable development of Canada's natural resources	268.1	270.9	263.8	1, 2, 3, 4	Geoscience mapping, gas hydrates research, geoscience for oceans management; metals, materials, and mining research and development; forest science research and development; research in renewable energy production and efficient use.	Stimulate mineral exploration; recognize and develop environmentally friendly energy source; effective decision making impacting the sea floor; sustainable development of mining resources, industries, and products; tools and techniques for the sustainable management of Canada's forests; sustainable development of energy resources; further renewable energy; improve efficiencies in energy use.
Connecting Canadians to geospatial information	38.4	27.9	27.9	1	GeoConnections; northern resources development.	Making geospatial information available to Canadians through the Internet; sustainable development of northern resources through information dissemination.
Creating an Aboriginal property rights infrastructure	12.4	11.3	11.3	2	Canada Lands Surveys System.	Increase effectiveness and self-sufficiency of Aboriginal lands and resource management.
Forest sector programs, investments, and special initiatives	70.9	56.6	56.5	1, 2	Canada Wood; softwood lumber; Forest 2020/ Greencover; model forests; FNFP; Value to Wood.	Greater economic opportunities and encouraging investment in innovative and higher value uses of natural resources.
Ensuring a clean and safe environment for Canadians	32.5	28.1	17.4	2, 3	Groundwater program; climate change impacts and adaptation; Port Hope low-level radioactive waste management.	Improve knowledge, sustainable development of water systems; reduce Canada's vulnerability to climate change; ensure that long-term management of radioactive waste is carried out in an effective and sustainable manner.
Policy research and development for the sustainable development of natural resources	113.2	118.7	115.0	1, 2, 3, 4	Policy coordination and planning; Kyoto and climate change policy support.	Reduce GHG emissions; foster sustainable development, use, and management of Canada's natural resources through effective policy research.
Leveraging investments in climate change	16.8	0.0	0.0	3	TEAM; impacts and adaptation.	Reduce GHG emissions via leveraged investments of the Climate Change Action Fund.
Energy efficiency, alternative and renewable energy - market transformation and incentives	237.7	251.8	94.5	1, 3	Ethanol Expansion Program; efficient/renewable energy-market transformation incentives.	Reduce Canada's energy consumption and reduce GHG emissions; commercialization of renewable alternative energies in Canada.

Major Initiatives (consolidated)	Planned Spending ($ millions)			Strategic Outcome	Planned Activities	Expected Results
	2004-05	2005-06	2006-07			
Meeting Canadians' security and safety needs	17.7	17.7	17.7	2, 3, 4	Explosives regulation; natural hazards research and emergency response; charts and maps; international boundary management.	Safety through training and certification of explosives handling, storage, and production; improving natural hazards knowledge and emergency response; safe air navigation; defined boundaries supporting sovereignty.
Offshore oil industry development, support, and regulation	184.1	437.1	717.1	2, 4	Revenue sharing; royalty collection; offset; Hibernia.	Fiscal, regulatory and voluntary approaches that encourage the sustainable development of offshore oil resources.
Departmental services	94.3	84.3	81.4	5	Corporate services and executive direction and support	Manage the Department responsibly and effectively while supporting program delivery.

To provide Canadians with:
Strategic Outcome 1. Information to make balanced decisions regarding natural resources
Strategic Outcome 2. Sustainable economic, social and environmental benefits derived from natural resources for present and future generations
Strategic Outcome 3. Strategies that reduce the environmental impacts of natural resources development and use
Strategic Outcome 4. Enhanced safety and security in the natural resources sector
Strategic Outcome 5. A department that is efficiently and effectively managed

8. Net Cost of Program for the Estimates Year 2004-05

($ millions)	**Total NRCan**
Planned Spending (budgetary main estimates plus adjustments)	
Information Dissemination and Consensus Building	186.7
Economic and Social Benefits	365.1
Environmental Protection and Mitigation	586.9
Safety and Security of Canadians	32.0
Sound Departmental Management	59.5
Sub-Total Planned Spending	**1,230.2**
Plus: Services received without charge	
Accommodation provided by Public Works and Government Services Canada (PWGSC)	14.6
Contributions covering employers' share of employees insurance premiums paid by TBS	22.1
Workmen's compensation coverage provided by Human Resources Development Canada	0.3
Salary and associated expenditures of legal services provided by Justice Canada	1.0
Total Services Received without Charge	38.0
Less: Non-respendable revenue	(150.3)
Net Cost of Program	**1,117.9**

9. Geomatics Canada Revolving Fund Statement of Operations and Changes in Financial Position

($ millions)	Forecast Revenue 2003-04	**Planned Revenue 2004-05**	Planned Revenue 2005-06	Planned Revenue 2006-07
Respendable revenues[1]:				
Products	11.6	**11.7**	11.7	11.7
Services	4.1	**4.1**	4.1	4.1
Consulting	2.0	**2.0**	2.0	2.0
Total respendable revenues	17.7	**17.8**	17.8	17.8
Operating Expenses:				
Cost of sales	2.9	**2.9**	2.9	2.9
Salaries and employee benefits	5.9	**6.0**	6.0	6.0
Depreciation	0.6	**0.6**	0.6	0.6
Repairs and Maintenance	0.4	**0.4**	0.4	0.4
Administrative and support services	2.1	**2.1**	2.1	2.1
Utilities, materials, and supplies	0.5	**0.5**	0.5	0.5
Rental	0.4	**0.4**	0.4	0.4
Interest	0.1	**0.1**	0.1	0.1
Transportation and communication	0.6	**0.6**	0.6	0.6
Professional and special services	3.7	**3.7**	3.7	3.7
Total operating expenses	17.2	**17.3**	17.3	17.3
Operating surplus (deficit)	0.5	**0.5**	0.5	0.5
Add non-cash items: Depreciation	0.6	**0.6**	0.6	0.6
Changes in working capital	(1.1)	**1.3**	(1.1)	(1.1)
Others	0.2	**0.2**	0.2	0.2
Investing activities:				
Capital acquisitions	(0.2)	**(0.2)**	(0.2)	(0.2)
Surplus (Deficit)	0.0	**2.4**	0.0	0.0

Note: Forecast activity for 2003-04 has been updated to reflect most recent business information. Planned surplus (draw down) in 2005-06 and 2006-07 have both been reduced from a surplus of $2.4 million to zero in order to reflect more accurate forecasts in the revolving fund.

10. Projected Use of Geomatics Canada Revolving Fund Authority

($ millions)	Forecast 2003-04	**Planned 2004-05**	Planned 2005-06	Planned 2006-07
Authority[1]	5.0	**5.0**	5.0	5.0
Drawdown as at April 1	(2.9)	**(2.9)**	(0.5)	(0.5)
Projected surplus (drawdown)[2]	0.0	**2.4**	0.0	0.0
	(2.9)	**(0.5)**	(0.5)	(0.5)
Projected available authority at March 31	2.1	**4.5**	4.5	4.5

1. $5 million is the maximum amount that may be drawn down from the Consolidated Revenue Fund (CRF) at any time.

2. Forecast results for 2003-04 have been updated to reflect most recent business information. Planned surplus (draw down) in 2005-06 and 2006-07 have both been reduced from a surplus of $2.4 million to zero in order to reflect more accurate forecasts in the revolving fund.

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

($ millions)	Forecast balance April 1st, 2004	Receipts and other credits	Payments and other charges	Forecast balance March 31st, 2005
Atomic Energy of Canada Ltd.				
Heavy Water Inventory	4.5	(1.0)	0.0	3.5
Hibernia Development Project	46.0	(9.2)	0.0	36.8
Nordion International Inc.	86.0	(4.0)	0.0	82.0
Total	**136.5**	**(14.2)**	**0.0**	**122.3**

12. Horizontal Initiative

Addressing climate change is the most horizontal issue facing NRCan. More than ten different departments are actively involved in one or more aspects of this issue. Similarly, within the Department, all sectors have climate change related activities. Key aspects of this important issue are:

- climate science: understanding how human activities are affecting the earth's climate;
- international relations: finding international solutions to this global problem;
- mitigation: realizing greenhouse gas emissions reductions and removals;
- public education and outreach: encouraging individual Canadians to take action on climate change;
- technology and innovation: advancing climate change mitigation technologies to achieve longer term solutions; and,
- adaptation: helping Canadians adapt to a changing climate.

A wide range of activities take place within each of these key areas. The federal focus so far has been with respect to domestic mitigation efforts. NRCan plays a leading role in this regard, implementing a wide range of programs and initiatives to achieve emissions reductions from all sectors of Canadian society such as the built environment, transportation, industrial activities and electricity generation. Accountability for individual climate change programs resides with individual departments. Information on these programs, including strategic objectives and results achieved, is made available in program documentation (e.g. publications, web sites).

To allow a more strategic management of the climate change issue, there is a need to aggregate program-level information into higher level communications. This has taken place in the past through discrete initiatives such as the preparation of the *2001 Canada's Third National Report on Climate Change*. Given increased federal investments in climate change announced in Budget 2003, an inter-departmental process has been set up to formalize the consolidation of program-level information. An horizontal results-based management accountability framework is being developed for the climate change issue at a broad level. In addition to helping the assessment of current climate change efforts at a broad level, this horizontal framework will also facilitate a better communication of federal climate change efforts.

Annexes - Supplementary Information

1. Key Partners

Key Co-delivery Partners	Areas of Cooperation
<u>OGDs/Agencies</u> • Environment Canada • Department of Foreign Affairs and International Trade • Revenue Canada • Justice Canada • Finance Canada • Agriculture and Agri-Food Canada • Fisheries and Oceans Canada • Health Canada • National Defence • Industry Canada • Human Resources Development Canada • Indian and Northern Affairs Canada • Climate Change Secretariat • Canadian International Development Agency <u>External</u> • United Nations Agencies • Aboriginal Organizations • Provincial/Territorial/Municipal Governments • Industry • Academia • Non-Government Organizations <u>Portfolio</u> • National Energy Board • Atomic Energy Canada Limited • Atomic Energy Control Board • Cape Breton Development Corporation • Newfoundland and Nova Scotia Offshore Petroleum Boards	<u>Strategic Outcome 1</u> • sharing of knowledge • cooperation and consensus building • technology transfer • long-term research • development and implementation of policies, Acts and fiscal, regulatory and voluntary approaches <u>Strategic Outcome 2</u> • generating economic and social benefits • developing non-government centres of excellence • expanding access to international markets • increasing Aboriginal and northern community capacity <u>Strategic Outcome 3</u> • climate change strategies, technologies, programs and projects • technologies and stewardship practices • energy efficiency and effectiveness <u>Strategic Outcome 4</u> • safeguarding Canadians from natural and man-made hazards • spatial positioning, mapping and boundary maintenance • safe use of explosives and pyrotechnics • regulatory frameworks for energy transmission, offshore development and Canada's uranium and nuclear industry

2. Internet Addresses

Natural Resources Canada

Headquarters Library
Public Enquiries
Main Floor, 580 Booth Street
Ottawa, ON, K1A 0E4
Telephone:(613) 995-0947
Fax: (613) 992-7211

Headquarters and Sector Internet Sites:

Natural Resources Canada Home Page	http://www.nrcan.gc.ca
Aboriginal Portal	http://www.nrcan.gc.ca/aboriginal
Audit and Evaluation	http://www2.nrcan.gc.ca/dmo/aeb
Canadian Forest Service	http://www.nrcan.gc.ca/cfs
Climate Change – Government of Canada	http://climatechange.gc.ca/
Climate Change – NRCan	http://www.climatechange.nrcan.gc.ca/
Corporate Services Sector	http://www.nrcan.gc.ca/css
Earth Sciences Sector	http://www.nrcan.gc.ca/ess
Energy Sector	http://www.nrcan.gc.ca/es/
Minerals and Metals Sector	http://www.nrcan.gc.ca/mms
S&T at NRCan	http://www.nrcan.gc.ca/dmo/scitech
Statutes and Regulations	http://www.nrcan.gc.ca/dmo/spcb/regiss_e.html
Sustainable Development	http://www.nrcan.gc.ca/sd-dd/

Canadian Forest Service Internet Sites:

CFS Atlantic Forestry Centre	http://www.fcmr.forestry.ca
CFS Great Lakes Forestry Centre	http://www.glfc.forestry.ca
CFS Laurentian Forestry Centre	http://www.cfl.forestry.ca
CFS Northern Forestry Centre	http://www.nofc.forestry.ca
CFS Pacific Forestry Centre	http://www.pfc.cfs.nrcan.gc.ca
Costa Rica-Canada Initiative	http://www.nrcan.gc.ca/cfs/crc/
Criteria and Indicators (C&I)	http://www.NRCan.gc.ca:80/cfs/proj/ppiab/ci/
First Nation Forestry Program	http://www.fnfp.gc.ca/
Model Forest Network	http://mf.ncr.forestry.ca/
Montreal Process C&I	http://www.mpci.org/
National Forest Strategy	http://www.nrcan.gc.ca/cfs/nfs/strateg/control_e.html
United Nations Framework Convention on Climate Change	http://www.unfccc.de/

Earth Sciences Sector Internet Sites:

Geomatics Canada: • Aeronautical Charts and Technical Services • Canada Centre for Remote Sensing • Centre for Topographic Information • Legal Surveys & International Boundary Commission • Geodetic Surveys	http://nrcan.gc.ca/geocan/
Canadian Geoscience Publications Directory	http://ntserv.gis.nrcan.gc.ca

Earth Sciences Sector (continued)

Canadian National Earthquake Hazards Program	http://www.seismo.nrcan.gc.ca/
Canadian National Geomagnetism Program	http://www.geolab.nrcan.gc.ca/geomag/
Climate Change Impacts & Adaptation	http://adaptation.nrcan.gc.ca
Earth Sciences Information Centre	http://www.nrcan.gc.ca/ess/esic/
GeoConnections	http://www.geoconnections.org
Geological Survey of Canada	http://www.nrcan.gc.ca/gsc
Polar Continental Shelf Project	http://polar.nrcan.gc.ca
Targeted Geoscience Initiative	http://www.nrcan.gc.ca/gsc/tgi_e.html

Energy Sector Internet Sites:

CANMET Energy Technology Centre (CETC)	http://www.nrcan.gc.ca/es/etb
CETC Varennes	http://cedrl.mets.nrcan.gc.ca/
CETC Ottawa	http://www.nrcan.gc.ca/es/etb/cetc/
CETC Devon	http://www.nrcan.gc.ca/es/etb/cwrc/
Canadian Renewable Energy Network	http://www.canren.gc.ca/
Energy Resources Branch	http://www.enres.nrcan.gc.ca/
Energy, Minerals and Metals Information Centre	http://www.nrcan.gc.ca/es/msd/emmic/web/index.html
Nuclear energy, uranium and radioactive waste	http://nuclear.nrcan.gc.ca
Office of Energy Efficiency	http://www.oee.nrcan.gc.ca
Office of Energy Research and Development	http://www2.nrcan.gc.ca/es/oerd/
Renewable Energy Deployment Initiative	http://www2.nrcan.gc.ca/es/erb/english/View.asp?x=455
RETScreen™	http://132.156.62.20/
Sustainable Energy Indicators	http://www2.nrcan.gc.ca/es/es/sdi/
Technology Early Action Measures (TEAM)	http://climatechange.gc.ca/english/actions/action_fund/techno.shtml

Minerals and Metals Sector Internet Sites:

Mines Ministries of the Americas	http://www.camma.org
Canada: A Diamond Producing Nation	http://www.nrcan.gc.ca/mms/diam/index_e.htm
Canada's Mining Taxation	http://www.nrcan.gc.ca/ms/efab/tmrd/
CANMET - Canadian Explosives Research Laboratory (CERL)	http://www.nrcan.gc.ca./mms/cerl/home_e.htm
Canadian Certified Reference Materials Project (CCRMP)	http://www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/ccrmp/ccrmp-e.htm
Canadian Lightweight Materials Research Initiative	http://climri.nrcan.gc.ca
Canadian Minerals Yearbook	http://www.nrcan.gc.ca/mms/cmy/index.htm
CANMET Materials Technology Laboratory	http://www.nrcan.gc.ca/mms/canmet-mtb/mtl
CANMET Mineral Technology Branch	http://www.nrcan.gc.ca/mms/canmet-mtb
CANMET Mining and Mineral Sciences Laboratories	http://www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/
Catalogue of Social Practices in the Canadian Minerals and Metals Industry	http://www.nrcan.gc.ca/mms/sociprac/intro_e.htm
Explosives Regulatory Division	http://www.nrcan.gc.ca/mms/explosif/

Minerals and Metals Sector (continued):

Family Fireworks Safety	http://www.nrcan.gc.ca/explonet/defaultnoflash.htm
Global Dialogue of Government on Mining/Metals and Sustainable Development	http://www.globaldialogue.info/im_e.htm
Information for Exporters	http://www2.nrcan.gc.ca/mms/export/menu_e.asp
Inventory of Mining Industry Practices to Conserve Wildlife and Habitat in Canada	http://www.nrcan.gc.ca/mms/wildlife/awdsrec_e.htm
Investing in Canada's Natural Resources Sector	http://invest.nrcan.gc.ca/intro_e.html
Investment Tax Credit for Exploration In Canada	http://www.nrcan.gc.ca/mms/efab/tmrd/d_inv_2d2_taxcredit2000.htm
Kimberley Process Certification Scheme for International Trade in Rough Diamonds	http://mmsd1.mms.nrcan.gc.ca/kimberleyprocess/note_e.asp
Mapping Federal-Provincial-Territorial Mining Knowledge	http://mmsd1.mms.nrcan.gc.ca/maps/
Mines Ministers Conference	http://www.nrcan.gc.ca/mms/mmc/index_e.htm
Minerals and Metals – A World to Discover	http://www.nrcan.gc.ca/mms/scho-ecol/toc_e.htm
Minerals and Metals Fact Sheets and Information Bulletins	http://www.nrcan.gc.ca/mms/prod-serv/fs_e.htm
Minerals and Mining Statistics On-Line	http://mmsd1.mms.nrcan.gc.ca/mmsd/default.html
Minerals and Metals Policy of the Government of Canada	http://www.nrcan.gc.ca/mms/policy/policy_e.htm
NDT (non-destructive testing) Certifying Agency	http://ndt.nrcan.gc.ca/
Pipeline Integrity Internet Icon (PICon)	http://www2.nrcan.gc.ca/mms/picon/default.htm
Recycling Web Site	http://www.recycle.nrcan.gc.ca/default_e.htm
Recycling in Canada	http://www.recycle.nrcan.gc.ca
Recycling Technology Network	http://www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/rnet/rnet-e.htm
Research and Innovation	http://www.nrcan.gc.ca/mms/topi-suje/ri_e.htm