

RECOMMENDATIONS FOR BUDGET 2013

National Conservation Plan



Subsidy Reform



Green Infrastructure for First Nations Communities



Environmental Laws and Science



Bird Studies Canada • Canadian Environmental Law Association • Canadian Parks and Wilderness Society
Centre for Integral Economics • David Suzuki Foundation • Ducks Unlimited Canada • Ecojustice • Friends of the Earth
Greenpeace Canada • International Institute for Sustainable Development • Nature Canada • Nature Conservancy of Canada
Pembina Institute • Sierra Club Canada • Wildlife Habitat Canada • WWF-Canada



WHO WE ARE

The Green Budget Coalition (GBC), founded in 1999, brings together sixteen leading Canadian environmental and conservation organizations, which collectively represent over 600,000 Canadians, through our volunteers, members and supporters.

OUR MISSION

The mission of the Green Budget Coalition is to present an analysis of the most pressing issues regarding environmental sustainability in Canada and to make a consolidated annual set of recommendations to the federal government regarding strategic fiscal and budgetary opportunities.

OUR VISION

The Government of Canada contributes to securing and maintaining the environmental sustainability of Canada through appropriate investments in environmental programs and through the adoption of appropriate policies related to taxation, pricing and subsidies.

Objectives

- To bring together the collective expertise of leading Canadian organisations regarding the important environmental issues facing Canada.
- To prepare and promote prioritized recommendations annually to the federal government on policies, actions and programs whose implementation would advance environmental sustainability and which could be reflected in the federal budget.
- To monitor federal budget decisions and spending estimates and to track GBC recommendations with a view to assessing the likely effect of budgetary and fiscal decisions on the environment and to evaluating the GBC's impact on fiscal policy and budgetary actions.

The GBC makes its decisions on a consensus basis. Nature Canada hosts the Green Budget Coalition. George Finney, President of Bird Studies Canada, is the GBC's Chair.

The Green Budget Coalition sincerely thanks the EJLB, McLean, and Salamander Foundations for their generous, long-standing support.



EXECUTIVE SUMMARY

The Green Budget Coalition agrees with the Minister of Finance, the Honourable Jim Flaherty, who “emphasiz[ed] that the environment and the economy are inextricably linked, and that by ensuring that Canada has a clean and healthy environment we will be able to build an economy strong enough to maintain the enviable standard of living Canadians have come to expect.”¹

Canada’s environment is central to Canadians’ prosperity. Encompassing clean air and water for our day-to-day health, natural resources that power our economy and hundreds of thousands of jobs, plus unique wild spaces and species, a healthy environment is critical to ensuring healthy and prosperous lives for all Canadians.

The **Green Budget Coalition** (GBC), active since 1999, brings together sixteen of Canada’s leading environmental and conservation organizations, representing over 600,000 Canadians, to present an analysis of the most pressing issues regarding environmental sustainability in Canada and to make recommendations to the federal government regarding strategic fiscal and budgetary opportunities.

We continue to believe that budgets are best restricted to their core matters of fiscal and monetary policy.

The Green Budget Coalition has publicly welcomed the Government of Canada’s progress, over recent years, including on conservation, subsidy reform, fresh water, and green infrastructure for First Nations communities. However, much more is needed to complete these efforts, and to strengthen Canada’s crucial environmental law and science capacity. Waiting to do so will increase both the urgency and the costs of action.

Budget 2013 is a prime opportunity to take such strategic actions.

The Green Budget Coalition’s feature recommendations for Budget 2013 are:

- 1) **Subsidy Reform in the Extractive Industries,**
- 2) **National Conservation Plan: Securing Canada’s Natural Advantage for Future Generations,**
- 3) **Strengthening Canada’s Environmental Law and Science Capacity, and**
- 4) **Green Infrastructure in First Nations Communities.**

Importantly, many of the recommendations in this document address the requirements for “responsible” resource development in Canada.

At the same time, strong action on climate change continues to be needed. As Prime Minister Harper has asserted, climate change is “perhaps the biggest threat to confront the future of humanity today.”² *Tackling climate change* will involve an ongoing and increasingly meaningful switch away from using fossil fuels such as coal, oil, and natural gas, and towards the efficient use of clean, renewable energy. This switch will not happen overnight. But it has to begin now and be unrelenting for the next three to four decades in order for Canada’s resulting greenhouse gas pollution to be reduced virtually to zero by 2050. Implementing a robust price on greenhouse gas (GHG) emissions³ is crucial, and would accelerate Canada’s transition to a low-carbon economy.

¹ Department of Finance Canada, 14 September 2011, “Government of Canada Promotes Economic Prosperity Through Support for Small Business”, <http://www.fin.gc.ca/n11/11-080-eng.asp>

² Speech by Prime Minister Stephen Harper in Berlin, Germany, on June 4, 2007. www.pm.gc.ca/eng/media.asp?category=2&id=1681

³ A price on greenhouse gas emissions – a “carbon price” – can be implemented through a cap-and-trade system or a carbon tax. See Carbon Pricing, later in this document.

The Green Budget Coalition also recommends these complementary budget actions:

Energy Sustainability and Climate Action

- 1) Sustainable Energy for Canada: From Research to Deployment
- 2) Carbon Pricing: Accelerating Progress Towards a Low-Carbon Economy
- 3) Hidden Liabilities in the Arctic Offshore and Nuclear Power: Protecting Taxpayers and the Environment
- 4) Establishing a Federal Savings Fund for Oil and Gas Revenues

Healthy Communities

- 5) Funding Canada's Infrastructure Future
- 6) Canada's Fresh Water: Investing for Healthy Communities, Economies and Environments
- 7) Sustainable Transportation: Electric Vehicles

Subsidy and Pricing Reform

One of the fundamental requirements for making a successful and efficient transition to a sustainable Canadian economy – one that improves the lives of Canadians and the health of our environment in an ongoing, integrated fashion – is adapting governments' fiscal policies to support the achievement of Canada's sustainability objectives (and not detract from them).

Two fiscal strategies are of particular importance:

- 1) "Levelling the playing field" for natural resource exploitation and development through subsidy reform; and
- 2) Ensuring market prices "tell the environmental truth" through environmental pricing reform.

Adherence to the "polluter pays" principle is central to both of these strategies.⁴

The Green Budget Coalition has commended measures in the Government of Canada's past budgets for making important progress towards aligning federal fiscal policy with sustainability, including actions to phase out subsidies to fossil fuels in *Budgets 2007, 2011* and *2012*, and is highlighting leading opportunities in this document to build upon that progress. Prime opportunities for creating financial savings and environmental benefits are available by ending subsidies for the extractive industries, specifically fossil fuels and mining. The best opportunity to help market prices "tell the environmental truth" is to implement a price on greenhouse gas emissions.

Summary

The Green Budget Coalition strongly believes that the recommendations in this document will be invaluable for providing Canadians with a healthy environment, a thriving, sustainable economy, and the opportunity to live healthy lives. For this reason, we expect to continue promoting and refining these recommendations until they are adopted. Feedback and suggestions are welcome.

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⁴ In Budget 2005, the Government defined "polluter pays" as meaning that "the polluter should bear the costs of activities that directly or indirectly damage the environment. This cost, in turn, is then factored into market prices." [<http://www.fin.gc.ca/budget05/bp/bpa4e.htm>] On May 29, 2007, as Environment Minister, the Hon. John Baird re-affirmed the government's commitment to this principle by telling the House of Commons Standing Committee on the Environment and Sustainable Development that the government "believes the polluter should pay." [<http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=2977081&Language=E&Mode=1>]

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This document will also be available at www.greenbudget.ca/2013/main.html

www.greenbudget.ca

FEATURE RECOMMENDATIONS



FEATURE RECOMMENDATION

SUBSIDY REFORM IN THE EXTRACTIVE INDUSTRIES: RESPONSIBLE RESOURCE DEVELOPMENT

stock.xchng

Recommendation Summary

The Government of Canada has moved to enhance the neutrality of the tax system and further rationalize inefficient fossil fuel subsidies⁵ by phasing out tax preferences for the oil and gas sector in three of the last six federal budgets. Important commitments were contained in Budgets 2007, 2011 and 2012, likely resulting in increased federal revenue in the order of \$400 million annually.⁶ The Green Budget Coalition has advocated for a number of years that the federal budget move to remove tax expenditures to the fossil fuel extraction industry, and therefore supports the Government of Canada's commitments to reduce fossil fuel subsidies.

Added in Budget 2012 was movement to enhance the neutrality of the tax system by also phasing out tax preferences to the mining sector. Removing the Atlantic Investment Tax Credit for mining as well as phasing out the Corporate Mineral Exploration and Development Tax Credit are both steps oriented to contribute to both tax neutrality and responsible resource development.

The movement in Budget 2012 to bundle fossil fuel subsidy reform with responsible resource development is good. With a booming resource sector, lowered corporate income tax rates, and policy to streamline federal environmental assessment procedures, the level of resource extraction will likely continue to increase in Canada. With increased economic activity, there will be an increase in tax expenditures as an expanding resource sector accesses federal tax provisions. To the extent these tax provisions increase economic activity and lead to adverse environmental outcomes, further enhancing the neutrality of the tax system is a priority recommendation for the GBC.

While these are important first steps, Canada has a continued opportunity to support responsible resource development while improving the neutrality of the tax system. The Green Budget Coalition offers the following recommendations for subsidy reform to the Department of Finance Canada:⁷

1. **Enable Canadian Exploration Expenses (CEE) only for unsuccessful exploration:** The CEE allows companies to deduct 100% of their exploration expenses from their income tax each year (in the coal sector this includes the intangible costs of mine development). Recognizing that some expenses could be legitimate search costs similar to research and development, the deductible rate could be reclassified to only apply to unsuccessful exploration expenses. If exploration leads to development then

⁵ In support of Canada's G-20 commitment to phase-out inefficient fossil fuel subsidies over the medium-term.

⁶ Based on analysis from: Sawyer, Dave and Seton Stiebert, 2010, Fossil Fuels: At What Cost? Government support for upstream oil activities in three Canadian provinces: Alberta, Saskatchewan and Newfoundland and Labrador, http://www.iisd.org/gsi/sites/default/files/ffs_awc_3canprovinces.pdf; and Budget 2011, <http://www.budget.gc.ca/2011/home-accueil-eng.html>

⁷ Each of these recommended subsidy reforms was listed in a Memorandum from Finance Canada Deputy Minister Michael Horgan to the Minister of Finance, 18 March 2010, Subject: G-20 Commitment – Fossil Fuel Subsidies, <http://pubs.pembina.org/reports/department-of-finance-subsidies-memo.pdf>

the less preferential Canadian Development Expenses (CDE) rate of 30% could be applied, at least until this CDE is brought more in line with capital cost allowance rates that reflect the useful life of the asset. For oil and gas, about 40% of wells do not produce,⁸ indicating that about 60% of current exploration expense rates could be better aligned with the useful life of the asset.

Annual savings: Over \$240 million per year⁹

- 2. Remove Accelerated Capital Cost Allowance (ACCA) for the mining sector:** While the cost of tangible assets used in resource extraction and initial processing is usually deductible at a rate of 25% per year, new and expanded mines – including coal mines – allow a deduction of up to 100%. This ACCA has already been phased out for oil sands assets; the Green Budget Coalition recommends extending this to all mining to follow the rule of setting capital cost allowance rates based on the useful life of assets.

Annual savings: Minimum \$5 million¹⁰ (for the coal sector only)

- 3. Do not renew the Mineral Exploration Tax Credit (METC) for flow-through shares (mining).** Originally introduced in October 2000 to help moderate the effect of a global downturn in exploration in the 1990s, the METC has been renewed every year since. The METC complements flow-through shares,¹¹ enabling individuals who invest in flow-through shares to claim an amount equal to 15% of specified mineral exploration expenses incurred in Canada and renounced to flow-through share investors.¹²

Annual savings: \$100 million per renewal (over two fiscal years)

Total Savings: Over \$345 million per year¹³

Benefits for Canadians

There are both economic and environmental benefits of these proposed measures. First, increased economic activity attributable to tax expenditures can have a negative impact on environmental outcomes even when provincial and federal regulations are not contravened. This decreases Canada's natural capital, putting into jeopardy the net benefit of the tax expenditure. It also could impact on the goals of the Federal Sustainable Development Strategy.

Second, capital spending distortions can be attributed to preferential tax treatment, resulting in economic losses. Enhancing the neutrality of the tax system by bundling fossil fuel subsidy reform with other extractive sectors can support Canada's long term global competitiveness.

Background and Rationale

The identification and removal of subsidies to the extractive sector is an important and necessary component of the transition to a green economy and to maintain Canada's

⁸ Statistics Canada, Oil and gas extraction, Catalogue no. 26-213-X, Ottawa: Government of Canada, 2009.

⁹ The 2010 report entitled "Fossil Fuels – At What Cost?" estimated that federal government support through the CDE and CEE to the oil sector in Newfoundland and Labrador, Saskatchewan and Alberta was \$711 million in 2008. While this estimate has been useful, it is incomplete, as it does not cover all of Canadian oil production and omits support to the natural gas sector. Adopting the lump sum comparison approach (see Fossil Fuels – At What Cost?, Appendix 2, page 133) but applied to all oil and gas activity in Canada, federal support through the CDE and CEE averaged \$1.34 billion (CDN \$2010) annually over the 2004 to 2009 period. This value is prorated by Statistics Canada data on well success (Catalogue no. 26-213-X).

¹⁰ Memorandum from Michael Horgan to Minister of Finance, 18 March 2010, Subject: G-20 Commitment – Fossil Fuel Subsidies, <http://pubs.pembina.org/reports/departement-of-finance-subsidies-memo.pdf>, page 5.

¹¹ "Flow-through shares allow companies to renounce or "flow through" tax expenses associated with their Canadian exploration activities to investors, who can deduct the expenses in calculating their own taxable income". (Budget 2012, Annex 4).

¹² Budget 2012, Annex 4.

¹³ Budget 2012, Table A4.1

global competitiveness. During this time of fiscal constraint, subsidies to the extractive sector represent an added strain on public finances and an inefficient use of taxpayer dollars. (See also *Subsidy and Pricing Reform*, later in this document.)

Many of these tax preferences and accelerated deductions recommended for reform date back to the 1970s and have since outlived their original objectives.¹⁴ Phasing out these tax preferences would support the Advantage Canada goal of enhancing growth by improving the sectoral neutrality of the tax system.

Mineral Exploration Tax Credit

The Mineral Exploration Tax Credit was introduced as a temporary measure to promote investment in mineral exploration during a decline in exploration activity caused by a low period in the metal commodities cycle. However, this temporary measure has been repeatedly extended, despite subsequent increases in both metal prices and exploration investment.

In addition, it is uncertain whether it has had any significant impact on mineral exploration expenditures, in increasing metal reserves, or in creating sustained economic activity. The 2009 update of *Taxation Issues for the Mining Industry*¹⁵ found that in periods of higher metal prices, tax incentives did little to increase exploration. It also noted that in 2008, when exploration investment dropped 46% due to the recession and low mineral prices, the use of flow-through shares (the investment vehicle to which the METC is tied) also decreased by 42%. This data calls into question the ability of the METC to boost exploration investment during lows in the commodity cycle.

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¹⁴ Sawyer, Dave and Seton Stiebert, 2010.

¹⁵ Natural Resources Canada, Intergovernmental Working Group on the Mineral Industry, 2009, Taxation Issues for the Mining Industry: 2009 Update, <http://www.nrcan.gc.ca/mms-smm/busi-indu/met-qfi/2009/int-int-eng.htm#e>

FEATURE RECOMMENDATION

Dan Sokolowski

NATIONAL CONSERVATION PLAN: SECURING CANADA'S NATURAL ADVANTAGE FOR FUTURE GENERATIONS

Recommendation Summary

The Green Budget Coalition recommends that Canada's National Conservation Plan -- a commitment in the 2011 Speech from the Throne¹⁶ — focus on scaling up efforts to value and conserve nature for the benefit of current and future generations of Canadians, and on ensuring all parties work together in a coordinated way to achieve this goal.

In Budget 2013, we recommend that the federal government invest in several key areas of federal jurisdiction under a National Conservation Plan, including protected areas, migratory birds, and oceans.

There is a growing recognition around the world that conserving nature not only protects our treasured natural heritage, it also offers cost-effective "natural solutions" that support a sustainable resource economy, ensure food and water security, build resilience to the impacts of climate change, reduce the risk from natural disasters, support local economies through nature-based tourism, and enhance human health.¹⁷

The 2020 Aichi biodiversity targets, endorsed in 2010 by Canada and the international community under the auspices of the United Nations Convention on Biological Diversity, provide a comprehensive framework for action to conserve nature, including a commitment to protect at least 17% of land and 10% of the oceans by 2020. Canada's National Conservation Plan should include a road map to meet or exceed these biodiversity targets.¹⁸ It should be based on a strong foundation of science and traditional knowledge, and facilitate "on-the-ground" conservation outcomes in all regions of Canada, both terrestrial and marine, in a way that respects the rights and interests of indigenous peoples.

The National Conservation Plan is an opportunity to bring together governments, industry, non-governmental organizations, indigenous peoples and individual Canadians to work together to conserve nature, for its own sake, and because it provides enormous benefits to society. As such, the federal government should lead a coordinated nation-wide effort to scale up our conservation efforts with a focus on:

1. Completing connected networks of large core protected areas of habitat in all regions of the country, on land and in the ocean, and ensuring that these areas are managed to protect their long-term ecological integrity;

¹⁶ Government of Canada, 3 June 2011, Speech from the Throne, <http://www.speech.gc.ca/eng/media.asp?id=1390>

¹⁷ For example: IUCN Natural Solutions reports at: http://www.iucn.org/about/work/programmes/gpap_home/gpap_solutions/gpap_natsolflyer/; Convention on Biological Diversity. 2008. Protected Areas in Today's World: Their Values and Benefits for the Welfare of the Planet, <http://www.cbd.int/doc/publications/cbd-ts-36-en.pdf>; TEEB --The Economics of Ecosystems and Biodiversity in National and International Policy Making – Responding to the Value of Nature 2009, <http://www.teebweb.org/Portals/25/Documents/TEEB%20for%20National%20Policy%20Makers/TEEB%20for%20Policy%20exec%20English.pdf>

¹⁸ See the Convention on Biological Diversity Strategic Plan for Biodiversity 2011-2020, including the Aichi Biodiversity targets at <http://www.cbd.int/sp/>

2. Implementing world-class standards for the sustainable use of natural resources, thus positioning Canada as a leader in the global “green resource economy”;
3. Ensuring that conservation values on private lands in Canada are protected by helping private citizens safeguard critical ecological values on the working landscape, and supporting other tools like conservation land purchases and restrictive covenants. A successful example of this type of program is the Natural Areas Conservation Program, which has secured over 338,000 ha of ecologically significant private lands across Canada.
4. Completing ecosystem-based land and marine planning in all regions of the country to proactively facilitate nature conservation and sustainable development;
5. Ensuring strong federal laws and policies are in place that value and conserve nature, and provide consistently high standards and serve as a backstop to provincial and territorial legislation, including for recovering species at risk, environmental assessments, and conserving fish and wildlife populations and habitat; and
6. Connecting Canadians with nature in a way that supports both healthy ecosystems and healthy people.

Conserving nature will result in enormous economic, social, and cultural benefits for Canadians now and in the future.

Recommended Investment:

<i>Oceans:</i>	\$65 million per year, ongoing
<i>New National Parks:</i>	\$20 million per year, ongoing, plus a \$50 million one-time investment
<i>Protecting National Parks’ Ecological Integrity:</i>	\$10 million in 2013-14 rising, over five years, to \$50 million per year, ongoing
<i>Migratory Birds:</i>	\$30 million per year, ongoing

Background and Rationale

National Parks

Recommended investment:

\$30 million in 2013-14, ramping up over five years to \$70 million, ongoing, plus a \$50 million one-time investment

National parks are the cornerstone of the federal government’s terrestrial protected areas program. Our parks are beloved by Canadians as iconic symbols of our national identity, playing an important role in protecting the diversity of Canada’s magnificent lands, waters and wildlife. They also create jobs,¹⁹ provide ecosystem services such as clean water and carbon storage, contribute significantly to our economy, and support human health and well-being as key places where we connect with nature.

Completing our national parks system will be essential if Canada is to deliver on our international commitment to protect 17% of our land and freshwater by 2020. Work is well advanced towards creating new national parks in many regions of Canada. In recent years substantial progress has been made, however completing the national park system requires renewed federal investment, including to support good faith negotiations of park establishment agreements with indigenous peoples, other governments and interests.

The recent federal budget reduced the Parks Canada Agency budget by close to \$30 million per year. This has had a significant impact on the Agency’s ability to deliver on its mandate. For example the science and monitoring program which provides the necessary information for Parks Canada to protect our national parks’ ecological integrity has suffered a significant loss of capacity, putting this world-renowned program at risk. A reinvestment in science and monitoring capacity is required to ensure our national parks are protected in the long term.

¹⁹ Outspan Group, 2011, Economic impact of Parks Canada. <http://www.pc.gc.ca/eng/docs/bib-lib/econo2011.aspx>

New National Parks: \$20 million per year ongoing, plus a **\$50 million one-time investment** for land acquisition and other establishment costs.²⁰

Protecting National Parks' Ecological Integrity: An investment that ramps up over five years from **\$10 million to \$50 million in ongoing support** to support the national park conservation program, including for restoring the science and monitoring capacity needed to ensure the protection and restoration of ecological integrity in our national parks.

Ocean Health and Conservation: Foundations for the Blue Economy

Recommended investment: \$65 million per year, ongoing

The National Conservation Plan should stimulate the blue economy by investing in ocean health and conservation. Priorities include:

1. **Establishing a network of Marine Protected Areas (MPAs)** to protect marine biodiversity, help recover fish stocks, boost nature-based tourism, and maintain stable jobs for the future.

MPAs contribute to Canada's \$30 billion a year ocean economy. Bioregional planning should be conducted to identify an ecologically representative and well-connected network of MPAs. Canada has committed to protecting 10% of our oceans by 2020. Currently less than 1% is protected. To ensure Canada is on track to achieve this international commitment, the Green Budget Coalition recommends that Canada designate new marine protected areas covering at least 4% of Canada's waters within the next three years. This increase will ensure Canada is half way towards its 2020 commitment, and has done more than any previous government by doubling the current area protected.

Investment needed: \$35 million per year of ongoing funding (\$25 million for Parks Canada to create and manage National Marine Conservation Areas, \$9 million for Fisheries and Oceans Canada to designate Oceans Act marine protected areas and \$1 million for Environment Canada to establish Marine Wildlife Areas).

2. **Investing in marine management tools** to ensure intertwined economic and ecological health through bioregional marine planning. These tools will support responsible resource development, providing certainty and a stable investment climate for industry, and

identify thresholds and ecological limits of the ocean ecosystem. The tools should include:

- **Cumulative effects and risk assessment** — a whole-of-ocean approach that establishes thresholds is essential to maintaining the long-term health of the ocean ecosystem and the communities that depend on it.
- **Human use mapping to ensure the highest and best use of our oceans** — those critical to local and regional livelihoods and economies — are happening without conflict, and operators and regulators have the information they need for decision making.
- **Valuing ecosystem services** (e.g., climate regulation, pollination, water filtration) and integrating these values into decision-making. Ecological mapping will be an important tool to identify nature's services critical for long-term human and economic well-being.
- Tie these foundational elements together and implement **Marine Spatial Planning** to help ensure an integrated, ecosystem-based approach to the planning, protection, management and responsible use of marine areas and their resources.

Investment needed: \$20 million per year of ongoing funding

3. Invest in **state of the ocean reporting** to set marine environmental quality standards for responsible resource development, and to track how well these standards are being met.
 - Up-to-date science on the health of Canada's oceans is essential to establish a clear and accountable baseline for planning and implementing industrial development and conservation. Setting evidence-based standards will help support stable long term jobs and protect the resources which maintain those jobs. Environmental quality standards and regulations can then be set which benefit both development and ecosystems.

Investment needed: \$10 million per year of ongoing funding.

Total Investment required (for Oceans):

\$65 million per year, ongoing

See *Annex 1: Canada's Oceans (below)* for detail and more background.

²⁰ This investment would enable the completion of national parks in: South Okanagan-Similkameen, BC; Flathead Valley, BC; Thaidene Nene (East Arm of Great Slave Lake), NT; Bathurst Island, NU, Northern BC (Region 7); and Manitoba Lowlands, MB.

Conserving Our Migratory Birds

Recommended investment:

\$30 million per year, ongoing

To deliver on Canada's responsibilities to conserve migratory birds, a renewed investment is needed to support enhanced research and monitoring as well as conservation action in Canada, and throughout the Western Hemisphere.

The federal government's significant migratory bird responsibilities and accountabilities derive from the *Migratory Birds Convention* signed with the United States. Over the past 30 years, Canada's investment in migratory bird science and conservation has eroded, with some notable exceptions (which include investments in the *North American Waterfowl Management Plan* and in birds at risk through the *Species At Risk Act*).

Earlier this year, the North American Bird Conservation Initiative (Canada) published the first *State of Canada's Birds* report.²¹ Led by Environment Canada, Bird Studies Canada, Ducks Unlimited Canada, Nature Canada, the Nature Conservancy of Canada and Wildlife Habitat Canada, the report points to the strong influence of human activity on bird populations, both positive and negative, as well as the need for urgent action for bird conservation.

The report shows that some groups of birds in Canada are doing quite well. For example, waterfowl across the country are modestly increasing in response to the collective efforts of government and non-government agencies through the *North American Waterfowl Management Plan*. Hawks, eagles and falcons have also rebounded in response to management actions to control pesticides and re-introduce populations to their former range. Both successes are stellar examples of what we can do by employing effective science and conservation action in tandem. On the other hand, shorebirds, grassland birds and birds that feed on flying insects are doing very poorly, some species having declined by over 80% in the 40 years of measurement.

Given dramatic declines in many migratory bird populations, a re-investment in understanding and remedying the problem nationally and internationally is urgently needed.

Research and monitoring:

Research and monitoring is a fundamental underpinning of successful migratory bird conservation. Monitoring tracks changes in abundance and distribution of bird species, and research is required to understand which stressors are affecting the populations and to design possible solutions.

Enhanced research and monitoring should focus on:

- Assessing the impact of incidental take of migratory birds from forestry, agriculture and other industrial activities;
- Ensuring migratory birds are adequately considered in environmental assessments for proposed developments;
- Informing hunting regulations for migratory game birds;
- Reporting to Canadians on the status and trends of the migratory birds;
- Understanding the impact of climate change and other broad scale stressors on birds and ecosystem health so that adaptation strategies can be developed, particularly in the Arctic; and
- Assessing the state of Canada's 597 globally and nationally significant Important Bird Areas and to design strategies for their protection.

Conservation Action:

Keeping common birds common through pro-active conservation action is a more effective and inexpensive strategy than recovering birds once they are declared "at risk of extinction".

To prevent vulnerable species from further decline, Canada's pro-active bird conservation programs need to be enhanced. Available conservation tools include land securement and enhancement, stewardship of private lands, implementation of best management practices, designation of protected or specially managed marine and terrestrial habitats, and regulations. A National Conservation Plan should result in greater investment in migratory bird conservation, and strive to coordinate bird conservation measures with other conservation actions.

Partnerships in Canada and Abroad:

Canada should capitalize on the existence of broad coalitions of willing partners, with well-developed plans, to help advance migratory bird conservation. For example, the North American Bird Conservation Initiative, which consists of federal and provincial/territorial agencies, conservation NGOs and industry associations in Canada, as well as counterparts in the United States and Mexico, is an example of an effective conservation partnership.

Individual Canadians also have an important role to play. Tens of thousands of individual Canadians are actively supporting bird conservation through private funds. And citizens are also contributing valuable bird monitoring data. The *State of Canada's Birds* report was only possible because of the efforts of thousands of Canadian volunteer observers.

²¹ North American Bird Conservation Initiative Canada. 2012. The State of Canada's Birds, 2012. Environment Canada, Ottawa, Canada. <http://www.stateofcanadasbirds.org/>

International partnerships are also critically important. Canada shares its species with many other nations. In some provinces, over 90% of bird species leave the country each fall for destinations as far south as Tierra del Fuego. What we do in Canada may be of little import if conservation is not strong in other nations.

An important finding of the *State of Canada's Birds* report was that the birds that migrate the furthest are in steepest decline. Canada has historically played a small but important leadership role in conservation in other Western Hemisphere countries, many of whom are working to improve their relatively weak conservation infrastructure. Canada could help by playing a much more significant role in monitoring, research, conservation planning and capacity building in other countries. This needs to be a central element of an effective Canadian Migratory Bird Conservation Program.

Alternative and Complementary Measures

Extending Ecogift Tax Incentives to Inventory Lands

The Green Budget Coalition further recommends that the federal government amend the *Income Tax Act* to extend the tax incentives provided under the Ecological Gifts Program to apply to donations of ecologically significant lands held by corporations or individuals and not considered capital property (e.g., lands held as inventory). Such donations of inventory lands would, however, need to satisfy all of the existing criteria for an ecological gift.

This would build upon the Government's actions – completed in Budget 2006, and welcomed by the Green Budget Coalition – to reduce the capital gains inclusion rate on ecological gifts to zero.

For more details on the Green Budget Coalition's recommendation for extending Ecogift tax incentives to inventory lands, please see the *Green Budget Coalition's Recommendations for Budget 2012*.²²

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²². [http://www.greenbudget.ca/pdf/Green%20Budget%20Coalition's%20Recommendations%20for%20Budget%202012%20\(November%202011\)%20\(2\).pdf](http://www.greenbudget.ca/pdf/Green%20Budget%20Coalition's%20Recommendations%20for%20Budget%202012%20(November%202011)%20(2).pdf), page 46.

Annex I: Canada's Oceans

Background and Rationale

Forty per cent of Canada is ocean (the percentage will grow in area equivalent to the three Prairie Provinces after Canada's continental shelf extension under UNCLOS Article 76). Ninety per cent of world trade takes place by sea. Ocean industries contribute \$30 billion to Canada's economy each year, supporting 315,000 jobs, and creating opportunity in more than 1500 Canadian coastal communities as well as elsewhere across the country. We have explored less than 10% of the seafloor and less than 1% of the global ocean is protected. Canada's oceans resources are also a significant component of our export trade, worth over \$4.1 billion annually.

Scientific reports about the state of the oceans and the challenges facing certain fisheries raise concerns about the future of our oceans and the resources and services they provide to all Canadians. Oceans provide significant benefits and services – how we manage our oceans is not only a major determinant of our future health and prosperity, it is a reflection of Canadian governance and our place in the world. The environmental, economic and social implications of the choices we make in managing our oceans matter. An investment in Canada's oceans requires a relatively low budgetary resource compared to its pay-back in terms of domestic and international public perception and political influence.

Marine Protection

The Government of Canada has demonstrated leadership in recent years by creating new marine protected areas (MPAs): Tarium Nirvutait in the Arctic; Bowie Seamount; and a National Marine Conservation Area – Gwaii Haanas – on the Pacific Coast. There has also been substantive progress towards establishing National Marine Conservation Areas in the Southern Strait of Georgia, BC and Lancaster Sound, NU, as well as several Oceans Act MPAs. The amount of Canadian ocean area protected has grown under this government and there is an opportunity and need to accelerate this progress to achieve our international commitments on fisheries and biodiversity.

During the recent Conference of the Parties of the Convention on Biological Diversity, Canada committed to the conservation of 10% of its marine areas through the establishment of an ecologically representative and well connected system of protected areas by 2020. Unfortunately, even with the Government's recent announcements, less than 1% of Canada's ocean environments are protected, and at the current rate of MPA establishment, Canada would not meet its international commitments until 2070. By comparison,

Australia currently has 10% of its ocean protected with an additional 26% proposed, bringing the total to 36%.

In 2008, \$61.5 million was approved over five years for the Health of the Oceans (HOTO) Initiative as part of Canada's National Water Strategy. This funding, which enabled the completion of the National Framework for Canada's Network of Marine Protected Areas and progress on Oceans Act MPAs, ended in March 2012. Although an additional year of funding was provided in 2012, a new allocation in 2013 is critically needed towards marine protection in order to build on this government's record of protecting marine environments in Canada, and to complete proposed MPAs and plans that are currently underway.

State of the Ocean Reporting

Canadian ocean science and research requires improvement. As the Commissioner of the Environment and Sustainable Development noted in her 2005 audit of Fisheries and Oceans Canada: "...Fisheries and Oceans Canada has not provided Parliament and the public with the promised information on the state of Canada's oceans. The Department does produce state-of-the-oceans regional reports that are available to the public, but these scientific reports only describe the physical, chemical, and biological oceanographic state of the marine environment. Eight years after the Oceans Act came into force; it remains difficult to assess the condition of our oceans ecosystems, communities, and industries. The Department has not set a date for producing a first national state-of-the-oceans report."²³

Another seven years later, it remains the case that there is no national, comprehensive, annual state-of-the-ocean report for Canada's oceans. Yearly comprehensive national oceans reporting could:

- Describe the current state of the ocean, how it is changing, and how changes impact marine development and ecosystems;
- Identify current problems, develop future scenarios and recommend solutions to these problems that fit with future trends;
- Assist with setting and communicating environmental thresholds and indicators while identifying information and data gaps; and
- Outline good environmental quality standards, setting goals to achieve these standards and measuring progress.

Ideally, these outputs would be provided to decision makers to assist with accurately assessing the ecological and socioeconomic effects of actions over a given year in the ocean.

²³ Office of the Auditor General of Canada, 2005, Report of the Commissioner of the Environment and Sustainable Development to the House of Commons – 2005, <http://www.oag-bvg.gc.ca/internet/docs/c20050901ce.pdf>, p.24-25.

The Commissioner also noted that the management of marine resources and reducing conflict is at the heart of what the state-of-the-oceans reporting is all about: ‘... a state-of-the-oceans report is to keep the public informed, not just on the health of the oceans, but also on how we are managing marine resources, fostering sustainable oceans industries, engaging coastal communities, protecting species-at-risk and biodiversity, and resolving potential conflicts.’

Tools for Good Marine Management

Canada’s *Oceans Act* sets out the legislative, jurisdictional and regulatory authority for DFO to take a lead in coordinating the sustainable development and protection of Canada’s oceans. Over the years, since its passage in 1997, there have been various initiatives including the Oceans Strategy, Oceans Action Plan and Health of the Oceans Initiative to implement and resource the vision of the Oceans Act. At the core of these initiatives and the Act is the principle of Integrated Management (IM). IM is a commitment to the planning and management of human activities while considering all measures necessary for the conservation, protection and sustainable use of ocean resources and the shared use of ocean areas.

In 2005, Canada initiated the development of integrated management plans and allocated \$28 million for Canada’s Oceans Action Plan (OAP) over two years. The OAP provided an opportunity to establish marine planning processes throughout five Large Ocean Management Areas (LOMAs) and to shift relevant federal agencies from single issue management and uncoordinated decision making, to a more sustainable and coordinated management approach - one that would ensure protection of important marine environments while providing opportunities for business. These plans help sustain jobs and protect the ocean environment, resulting in healthy coastal communities. A robust and effective oceans management plan is also an essential precondition to maintaining the “social license” to operate in the domestic context for many sectors of Canada’s economy.

Critical to the success of Canada’s IM program and the bioregional marine planning process are the development and implementation of tools that set the foundation for good marine management. These tools (see below), when fully developed, will provide certainty for industry and a stable investment climate while establishing the thresholds and ecological limits of the ocean ecosystem. They are essential for maintaining the integrity of the ocean environment while boosting and enabling responsible resource development in Canada’s oceans.

Important and effective tools that can contribute to good marine management include:

Marine Spatial Planning (MSP): MSP is an operational process to help ensure an integrated, ecosystem-based approach to the planning, protection, management and responsible use of marine areas and their resources. Effective application of MSP addresses the current lack of coordination and integration of different sectors, levels of government, and even countries that today undermines the sustainable management of many marine areas.

Cumulative Effects Assessment: By taking a whole-of-ocean approach that recognizes multiple users and actions of those users, we are able to better assess and understand the combined influence of all activities on ocean health. Approaches to map, quantify and assess these cumulative effects are challenging, but also critical to do as they provide the necessary information and knowledge as to where combined effects pose a risk to ecosystem health and are contrary to responsible resource development. Such assessments can help establish and identify whether specific areas can sustain additional activities, and also help identify which areas are critical to the productivity of ocean ecosystems and whose health must be maintained for continued benefits to communities and regional economies.

Risk Assessment: These are building blocks of a cumulative effects assessment and are more detailed assessments of individual activities on different ecosystem components. Risk assessments take into account the differing sensitivities of different ecosystem components and help quantify the effects and also quantify the risk of damage of harm to those components from any one activity. This is foundational knowledge needed to determine the level of risk of individual activities on differing ecosystem components and to inform a cumulative effects assessment. Risk assessments help managers deliberate on what may be considered tolerable or acceptable risk.

Human Use Mapping: Mapping human uses is for an accountant akin to identifying your assets and where one derives benefit from use of the marine environment. It is also a way of identifying where the environment produces services like fisheries or tourism which are important to local and regional economies and people. It is key to map these areas of importance so that multiple users and beneficiaries of those uses can adequately represent their interests in planning and decision making processes.

Valuing Ecosystem Services: By allocating economic value to the hidden benefits of ecosystem services and biodiversity components, decision makers are better equipped to manage

current activities without compromising the ability of the environment to sustain natural processes that humans depend upon. Valuation of ecosystem services can also assist with the identification and implementation of economic incentives for biodiversity conservation through, for example, redirection of harmful subsidies, tax breaks, and other fiscal transfers.²⁴ As recognition of the importance of ecosystem services valuation as a tool to promote conservation of biological diversity and sustainable use of its components, the parties to the United Nations Convention on Biological Diversity (CBD) have agreed that:

“By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.”²⁵

This valuing of services can be operationalized through an ecological mapping approach which contributes to DFO’s core mandate of integrated management and the facilitation of conservation and economic development in Canada’s oceans.

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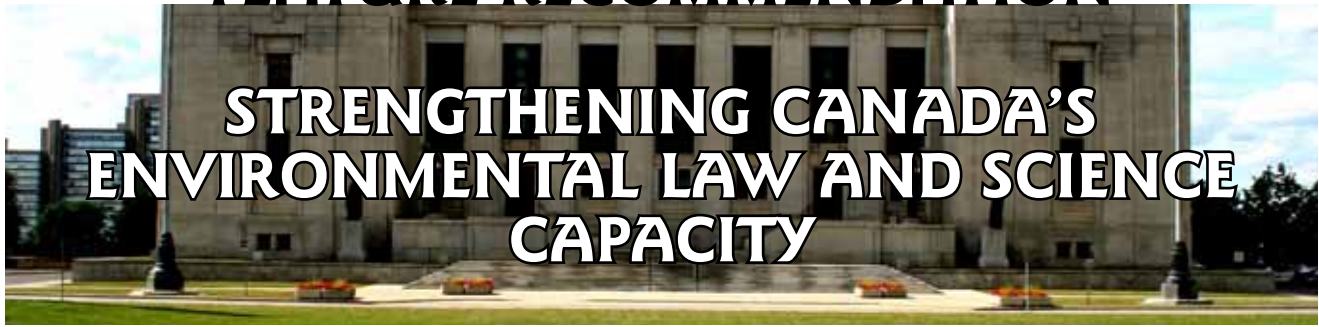
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²⁴ TEEB, 2010, The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A synthesis of the approach, conclusions and recommendations of TEEB. <http://data.iucn.org/dbtw-wpd/edocs/2010-051.pdf>

²⁵ UNEP/CBD/COP/Dec/X/2, 2010, Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets, Target 2. <http://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-en.pdf>

FEATURE RECOMMENDATION



STRENGTHENING CANADA'S ENVIRONMENTAL LAW AND SCIENCE CAPACITY

Recommendation Summary

The Government of Canada's environmental laws and science capacity are fundamental to its ability to protect Canadians' economic prosperity, health, and quality of life, and the ecosystems and natural resources on which they depend.

To ensure Canada's environmental laws and science capacity continue to effectively fulfill these critical roles, the Green Budget Coalition recommends that Budget 2013 strengthen the enforcement and implementation of Canada's environmental laws by:

1. Investing new funds to establish a comprehensive, web-accessible and continually updated database of all federal environmental enforcement and compliance data; and
2. Financially supporting the provinces and territories to ensure they can effectively deliver these laws, where intergovernmental arrangements have been adopted.

As a fundamental complement, the Green Budget Coalition also encourages the Government of Canada to affirm the importance of existing environmental laws and science capacity by committing to:

- Preserve current federal environmental science capacity; and
- Ensure that any proposed changes to environmental laws are reviewed by the most relevant House of Commons committee(s).

Recommended Investment:

<i>For environmental law enforcement monitoring:</i>	\$2 million per year for three years
<i>For environmental law program support to provinces:</i>	\$5 million per year for five years

Benefits for Canadians

Strong environmental laws, combined with strong science capacity, protect ecosystem and human health, increase equity, increase prosperity and competitiveness, provide a strong foundation of certainty and confidence for investors, protect resources for future generations as well as the present, increase quality of life, and decrease costs for health care and ecosystem clean-up, restoration and remediation. They also protect recreation values which are provided by: healthy clean freshwater; healthy, abundant fish; healthy forests, grasslands and parklands; and abundant wildlife habitat.

Background and Rationale

Strong protection for the environment is a top-rated value for Canadians. Federal environmental laws and science capacity play critical roles in ensuring environmental protection for Canadians.

Environmental Laws

1. Process for Reviewing Proposed Changes to Environmental Laws

For the benefit of Canadians, substantive amendments to federal environmental laws need to be carefully reviewed by the related House of Commons committee(s), comprising the

Members of Parliament with the most knowledge and time to effectively consider these important issues.

The federal budget process, including the House of Commons Finance Committee, is most appropriate for addressing the fiscal requirements of environmental laws, rather than the contents of the laws themselves. Canada has a strong tradition of extensive consultation and involvement of Canadians both in developing and in reviewing and amending its environmental laws. The matters addressed in Canada's environmental laws are complex and changes affect multiple private and public interests. Extensive consultation, assessment and attention to the values the law is intended to protect inevitably results in changes to make those laws stronger and to achieve better results.

The well-developed process for parliamentary committees to review proposed law amendments (outside of the budget process) is much better suited for this type of consultation, input and assessment prior to the development and introduction of the proposed changes to the substantive laws. The budget process is well-suited for considering budgets, including spending and fiscal proposals, but is not designed for, nor appropriate for, substantive law development. A key aspect is that traditional parliamentary law reviews allow and facilitate the openness and thoroughness that is a must for substantive law development, whereas the budget development process demands confidentiality and often requires a short timeline for committee review. In no sector is this openness so important as in the context of environmental laws which are intended to be universal in their application.

As such, the Green Budget Coalition encourages the Government of Canada to commit that any proposed changes to environmental laws will be comprehensively reviewed by the most relevant House of Commons committee(s).

2. Environmental Enforcement Monitoring and Information/Database Access

Canadians' ability to access federal environmental law enforcement information is a significant measure of government accountability and transparency.

The promise of "open government" in the realm of environmental compliance and enforcement data holds great potential, not only to engage citizens and communities in enforcement, but also to improve market functioning through more informed investments.

Accordingly, the Green Budget Coalition recommends the allocation of new dedicated funding to establish a comprehensive online system of enforcement information regarding federal environmental laws and the entities they

regulate.²⁶ By investing in adequate information technology (IT) infrastructure to allow for constant updating and delivery of such information, the federal government could build on the successful framework of the National Pollutant Release Inventory.²⁷

At present, only partial and piecemeal enforcement and compliance data is made available to Canadians through news releases, departmental enforcement alerts and (often delayed) statutory enforcement reports. This precludes Canadians from fully understanding or evaluating enforcement efforts with respect to particular communities or facilities. The establishment of a comprehensive, regularly updated database of all federal environmental enforcement and compliance data would enable Canadians to assist federal environmental regulators, leading to improvements in environmental performance and compliance. Canada should emulate the U.S. system, where the "ECHO" database²⁸ is searchable by zip code (address) or facility, providing quick and easy access to enforcement information. Searchable by geographic area and by regulated entity, a new online database would have the secondary benefit of increasing investor knowledge and awareness, potentially leading to stronger markets.

For all environmental statutes, the database would track the enforcement activities, including statistics related to inspections, investigations, reviews, warnings, and prosecutions. This data is essential to program managers, government, the public, investors, and others. The cost of the database would be defrayed by the resultant reduced government workload associated with formal requests for enforcement information. It would provide data useful for evaluation of the effectiveness of environmental laws and would be a useful input for reviews of environmental laws and of proposed changes to these laws.

Budget: \$2 million per year for three years

3. Environmental Law Program Support to Provinces and Territories

Adequate funding to support Canada's environmental laws is essential. Funding is necessary to ensure that: the programs envisaged by the laws are delivered; standards required by the laws are adhered to; there is appropriate research to support and improve the environmental law; there is oversight as to whether it is achieving its intended objectives; there is scrutiny to ensure that there are no unintended consequences; and that there is effective monitoring and enforcement of those laws. In addition, when aspects of Canada's federal laws are delivered in conjunction with the provinces, federal funding must ensure appropriate operation of those laws across the country.

²⁶ For more specific details, see *Getting Tough on Environmental Crime*, Ecojustice, 2011, <http://www.ecojustice.ca/publications/reports/getting-tough-on-environmental-crime>

²⁷ <http://www.ec.gc.ca/inrp-npri/>

²⁸ United States Environmental Protection Agency. Enforcement & Compliance History Online (ECHO), <http://www.epa-echo.gov/echo/>

In the event that the federal government enters into intergovernmental arrangements for delivery of national environmental laws within provinces and territories, it remains of paramount importance for the federal government to ensure that the intended objectives of those laws are being achieved. Accordingly, in addition to including such arrangements in the Environmental Law Monitoring and Environmental Law Reviews submitted above, there should be dedicated support to the provinces for the administration and delivery of those environmental laws in respect of the federal interests. The appropriate amount would depend on how many such arrangements are anticipated and negotiating this support should be an integral part of any such arrangements. As an interim measure, the Green Budget Coalition recommends allocation of five million dollars per year to ensure that there is additional support to the provinces and territories in respect of any substitution or equivalency arrangements under the *Canadian Environmental Assessment Act, 2012*.

Budget: \$5 million per year for five years.

Environmental Science Capacity

In order to effectively protect Canada's environment and Canadians' quality of life, and to guide responsible resource development, the federal government requires a strong, reliable capacity for environmental science, including permanent staff.

Canada's environmental science capacity is critical to ensuring that:

- Environmental programs are delivered and sustained;
- Environmental laws and regulations are adhered to and effectively enforced;
- Canada continues to meet its obligations under international environmental agreements;
- We continue to conserve our natural capital, wild spaces and species, and air and water quality;
- We continue to monitor our progress in conserving our natural capital, wild spaces and species, and air and water quality for future generations;
- There is appropriate research to support and improve environmental laws, regulations and operational policies;
- There is effective oversight as to whether laws, regulations and policies are achieving their intended objectives;
- There is appropriate research and education to mitigate the impacts of global environmental change and adapt to those changes where necessary; and
- The federal government's efforts to conserve, protect, restore and reconnect our shared environment complement those of the provinces, territories, and our international partners.

However, the federal deficit-reduction measures announced and implemented in 2011 and 2012 have resulted in significant reductions in federal environmental science capacities, including to core staff and the resources that provide those capacities.

While respecting that these deficit-reduction measures have been carried out to encourage greater fiscal responsibility within government, the Green Budget Coalition is concerned that these measures have unduly impacted the federal government's ability to carry out its environmental responsibilities, and have created a substantial risk of these measures' medium- and long-term costs far exceeding their short-term benefits in cost savings.

Acting rapidly to restore the government's science capacity in essential areas could maximize the benefits of such action for Canadians, and minimize the future costs of compensating for the implications of a weakened federal science capacity, and of restoring that capacity down the road.

Alternative and Complementary Measures

Environmental law reviews could be strengthened and create better results for Canadians by ensuring that they are: conducted publicly, with invitations for input by all Canadians who may be interested in, or affected by, the laws or regulations under review; and supported by strong defensible research and evaluation regarding the operation of each environmental statute undergoing review.

Canada's environmental laws and science capacity could also be importantly strengthened by amending those laws and regulations to ensure key federal departments and agencies are involved in environmental assessments related to their areas of scientific expertise and jurisdiction; for example, strengthening the habitat protection provisions of the Fisheries Act could importantly facilitate and improve the protection, monitoring and restoration of marine and aquatic ecosystems.

Contacts

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FEATURE RECOMMENDATION

GREEN INFRASTRUCTURE IN FIRST NATIONS COMMUNITIES

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Recommendation Summary

There are major opportunities to pursue co-benefits for First Nations communities by integrating green infrastructure thinking into the programs and policies that are needed for planning, building, updating, and repairing First Nations infrastructure. While some progress is being made, in many communities First Nations drinking water systems and First Nations housing stock are both in dire need of improvement and upgrading. Energy use is higher in many First Nations communities than the rest of Canada, due to a variety of factors including climate and remote location, which is often exacerbated by much higher energy prices. These issues are closely related to each other as well as to impacts on the health of First Nations community members, especially their children. A co-ordinated approach which takes advantage of latest technologies, opportunities for First Nations communities to participate in green technology development, training for First Nations youth, and integration of green infrastructure approaches would pay big dividends for First Nations communities. As First Nations issues are federal jurisdiction, it is incumbent on the federal government to facilitate progress in these areas through its budget documents.

The benefits would include: improved human health in these communities; increased education and training opportunities; increased employment opportunities for First Nations youth both within and outside of their home communities; and increased quality of life and control over their immediate environment.

The **Green Budget Coalition's primary recommendations** to create critical benefits for First Nations communities by utilizing green infrastructure thinking are to invest in First Nations:

1. **Water and wastewater systems. \$600 million per year for five years**
2. **Energy efficiency:**
 - a) **Deep measures residential energy conservation programs. \$24 million per year for five years**
 - b) **Non-residential energy efficiency projects. \$20 million per year for five years**
3. **Reduced diesel fuel use via green energy. See text for more details.**

Alternative and complementary measures address healthy housing and environmental health research for First Nations.

Total Recommended Investment (primary recommendations):

\$632 million per year for five years

Background and Rationale

1. Water and Wastewater Systems

The federal government has a clear mandate and fiduciary responsibility to ensure safe drinking water for Aboriginal Canadians.

The biggest challenge of access to clean drinking water is in small and rural communities and First Nations communities. Over 1,700 small and rural communities and over 100 First Nations communities across Canada are under boil water advisories in any given year.²⁹ Immediate attention is required to address the condition of First Nations water systems. A recent assessment commissioned by Aboriginal Affairs and Northern Development Canada (AANDC) found that 39% of First Nations drinking water systems are at high risk of being unsafe, and concluded that AANDC would need to spend approximately \$4.7 billion on infrastructure upgrades and training over the next ten years to address upgrades to meet existing protocols and new servicing demands.³⁰ In addition, it is important to note that provinces should also contribute along with the federal government, in a greater amount, to help fund water technologies in First Nations communities. This will help solve water issues in First Nations and remote communities, while propelling Canada into the global water management industry.

The federal government has achieved some progress on these challenges, by investing in drinking water and sewer systems over a number of years. Most recently, Budget 2012 invested \$330.8 million over two years, and the federal government cites \$2.5 billion in cumulative investments since 2006 for First Nations water systems.^{31,32} However, the number of drinking water advisories (DWAs) remains persistently high, with 116 communities under DWAs as of September 30, 2012, representing about 18% of the First Nations communities in Canada.

An initial investment of **\$600 million per year for five years** as new investment in addition to the annual AANDC regular program funding from the Capital Facilities and

Maintenance Program is needed to address new systems, upgrades, training, operations and maintenance, and research into novel systems to address the condition of First Nations water and wastewater systems. This value is based on the approximately \$6 billion required over ten years as outlined in AANDC's report: National Assessment of First Nations Water and Wastewater Systems – National Roll-up Report, Final (April 2011).³³ That report indicates that over the next ten years approximately \$1.2 billion is required to meet existing protocols and an additional \$4.7 billion for new servicing.³⁴ The \$1.2 billion required to meet existing protocols should be the budget priority for the first three years of the proposed five-year, \$600 million budget envelope.

Budget: \$600 million per year for five years

2. Energy Efficiency & Green Energy

The Green Budget Coalition recommends a significant federal investment in healthy First Nations energy efficiency and energy retrofit programs. While there are a variety of First Nations and provincial programs underway,³⁵ additional resources are needed from the federal government in order to make significant gains across Canada in a timely manner. Energy efficiency needs in First Nations communities also require healthy housing investments (detailed in Alternative and Complementary Measures, below), since many of the necessary energy improvements require improvements in housing stock. Energy conservation programs address not only much needed improvements in efficiency of utilization of energy resources and therefore provide cost savings and improved economic opportunities, they also address many of the health and comfort issues associated with poorly insulated buildings such as mold, indoor air quality and asthma.³⁶ These programs should be multi-fuel, that is, applicable whether energy and heat sources in the communities are supplied by electricity, diesel, oil, wood, natural gas, renewable energy or otherwise.

It is also important to ensure that energy efficiency and retrofit programs in First Nations communities are creating employment and skills training for youth in those communities, and this requirement should thus be designed

²⁹ Water Canada, 2011, Urgent Delivery, <http://watercanada.net/2011/urgent-delivery/>

³⁰ Aboriginal Affairs and Northern Development Canada, April 2011, National Assessment of First Nations Water and Wastewater Systems – National Roll-up Report Final. http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/enr_wtr_nawws_rurnat_rurnat_1313761126676_eng.pdf. The \$4.7 billion includes the cost of meeting protocols of \$1.2 billion.

³¹ Aboriginal Affairs and Northern Development Canada, Budget Highlights 2012, <http://www.aadnc-aandc.gc.ca/eng/1314815272921/1314816043432>

³² Canada, Budget 2012, Chapter 3.4.

³³ Aboriginal Affairs and Northern Development Canada, April 2011.

³⁴ The approximately \$1.2 billion in upgrades required to meet existing protocols is based on the \$1.08 billion in construction costs and the \$79.8 million in non-construction costs articulated in the report: National Assessment of First Nations Water and Wastewater Systems – National Roll-up Report, Final (April 2011).

³⁵ For example see the Manitoba Hydro "Power Smart First Nations" program which, as of 2012, has worked so far with 40 Manitoba First Nations in 400 homes with a program addressing issues like pipe wrap and draft proofing, and some potential deep measures which require significantly greater investment such as building insulation, http://www.hydro.mb.ca/your_home/first_nations/index.shtml; http://frontiersmb.ca/Publications/Management/2012%2002%2022_FNPSP%20Presentation%20for%20Frontiers%20SJ.pdf

³⁶ Canadian Environmental Law Association, "Healthy Retrofits" Executive Summary, 2011, <http://www.cela.ca/sites/cela.ca/files/CELA773-Healthy%20Retrofits-Exec-Summ-Eng.pdf>

into the programs as a funding condition. In addition, program development and delivery by the federal government with First Nations community partnerships is a key requirement.³⁷

A minimum five year investment is required in order to build and maintain capacity for program delivery. Currently 85,000 new units are required to alleviate overcrowding and backlogs. Approximately 44% of the housing stock needs repair and an additional 18% requires replacement and is beyond repair, yet remains occupied and overcrowded, causing serious health concerns. While the need is greater, this recommendation targets deep measures in 1,000 homes per year with the recognition that capacity for energy efficiency and retrofit delivery needs to continue to be built, especially in remote, rural and northern communities. In future years, the program should aim to provide deep measures energy retrofits (retrofits that deal with building envelope, insulation, and major appliances) in larger numbers of homes annually in First Nations communities across Canada.^{38,39,40}

Non-residential energy efficiency programs in First Nations communities are also critical for pursuit of energy use reductions, cost savings, and emissions reductions from institutional, commercial and other business facilities. Programs such as those pursued by the past Aboriginal and Northern Community Action Program (ANCAP) and the current EcoENERGY for Aboriginal and Northern Communities Program (EANCP) are important and should be funded and continued in First Nations communities across Canada.^{38,39,40}

Investment required:

- a) For deep measures residential energy conservation programs (installation of energy efficient appliances, installation of proper wall and building insulation, and efficient heating systems) in First Nations communities:

**2,000 homes per year across Canada at
\$12,000.00 per home for deep measures:
\$24 million per year for five years.**

- b) For non-residential energy efficiency projects in First Nations communities and partnerships, to pursue work done under the previous Aboriginal and Northern Community Action Program and to increase funding

for the EcoENERGY for Aboriginal and Northern Communities Program:

80 new projects across Canada per year at \$250,000 each – an investment of \$20 million per year for five years (in addition to current EANCP funding averaging \$4 million per year)

Reducing Diesel Fuel Use via Green Energy

There are many important environmental, health, and energy security benefits to be gained by such programs as ANCAP and EANCP that reduce First Nations communities' reliance on diesel fuel. See *Securing Arctic and remote communities' local energy supply in Sustainable Energy for Canada*, later in this document, for that related Green Budget Coalition recommendation.

Alternative and Complementary Measures

To complement infrastructure investments, Canada needs to fund training and technological development, specifically for small rural communities and First Nations communities. Along with insufficient funding, the lack of a legislative framework continues to undermine the ability to improve access to safe drinking water on First Nations reserves. The introduction in 2010 of Bill S-11, the *Safe Drinking Water for First Nations Act* – an act that attempts to establish enforceable drinking water regulations on First Nations reserves – was a start, followed by the introduction of the somewhat revised Bill S-8, under the same name.⁴¹ It proposed to establish enforceable regulations for drinking water and wastewater based on provincial drinking water laws. While needing improvements in the legislative text, Bills S-11 and S-8 demonstrate that the Government of Canada recognizes the need to prioritize the issue of safe drinking water for First Nations.

1. Healthy Housing

In Canada, 20% of Aboriginal multi-family households live with core housing needs (defined as housing that is either unaffordable, substandard, overcrowded, or all three) vs. 12.4% among non-Aboriginal households.⁴² About 44% of existing on-reserve housing stock requires major repair or

³⁷ For example, see the example of Five Nations Energy Inc. Conservation Program on the Western James Bay Coast : <http://www.nan.on.ca/upload/documents/energy2012-pr-lucie-edwards-fnei-conservation-program.pdf>

³⁸ Centre for Indigenous Resources, "Reflections on Success, A Sustainable Future in a Changing Climate", 2007, <http://www.aadnc-aandc.gc.ca/eng/1312212959922/1312213056686>

³⁹ The EANCP was renewed in Budget 2011 for 2011-16 with \$20 million and provides funding for clean energy projects in Aboriginal and Northern communities. It first operated from 2007 to 2011, and followed on the Aboriginal and Northern Community Action Program (ANCAP; 2003-2007) and the Aboriginal and Northern Climate Change Program 2001-2003). AANDC, "EcoENERGY for Aboriginal and Northern Communities Program 2011-2016, Information for Applicants", <http://www.aadnc-aandc.gc.ca/eng/1100100034258/1100100034259> AANDC, "Climate Change", <http://www.aadnc-aandc.gc.ca/eng/1100100034249/1100100034253>

⁴⁰ As of 2012, since 2007 the EANCP has provided support to 160 First Nations projects across Canada; at a maximum eligibility of \$250,000 per project (project eligibility varies).

⁴¹ Bill S-11 was introduced into the Senate on May 26, 2010, but was stopped when the 2011 federal election was called; in the current Parliament, Bill S-8 has now been introduced and was the subject of review by the Standing Senate Committee on Aboriginal Peoples in 2012 and was passed in the Senate June 18, 2012. The bill was then introduced at 1st reading in the House on June 19, 2012. <http://www.parl.gc.ca/LegisInfo/BillDetails.aspx?Language=E&Mode=1&billId=5409479>

⁴² Precarious Housing in Canada, 2010, Wellesley Institute; The Dunning Report: Dimensions of Core Housing Need in Canada. 2nd Ed. The Cooperative Housing Federation of Canada, August, 2009; CMHC, Canadian Housing Observer, 2009 and 2011 reports.

replacement.⁴³ The 2006 census data estimate that 15% of the First Nations population is living in overcrowded homes, a rate that is five times higher than the non-Aboriginal population.⁴⁴ The current government has acknowledged that,

“the housing situation on many reserves is inadequate, and that it can contribute to poor economic and social outcomes and contributes to the gap in quality of life experienced by First Nations peoples.”⁴⁵

The House of Commons Standing Committee on Aboriginal and Northern Affairs noted in 2007 that the estimates of on-reserve housing needs alone were between 20,000 to 87,000 homes, increasing at 2,000 homes per year,⁴⁶ and that inadequate and over-crowded housing result in extensive health and social impacts.

For off-reserve housing, the 2009 Eggleton – Segal Report *In from the Margins* noted that urban Aboriginal housing was in jeopardy from the discontinuance of previous funding programs. The report highlighted that,

“One of the most affected by housing problems are Aboriginal Canadians living off-reserve and increasingly concentrated in large urban areas – particularly Vancouver, Winnipeg, Regina, Toronto, Calgary and Edmonton. The focus of the federal government executive and legislative authority with respect to housing and other services for Aboriginal peoples has historically and primarily been on First Nations people living on reserves. With respect to on-reserve housing, however, the government states that it provides assistance based on policy and not treaty right. The federal government does provide some programs, albeit of a lesser scope, to off-reserve Aboriginal people, again on the basis of policy.”⁴⁷

Since 2005, the federal government’s actions have included:

- In 2006, made a one-time investment of \$300 million for housing in the Territories, and created a \$300 million trust for off-reserve Aboriginal housing;
- In 2007, announced a \$300 million First Nations Market Housing Fund;

- In 2007, also announced a review of the 1996 Aboriginal Housing Policy; and
- In 2010, announced a two year program, partially administered by Canadian Mortgage and Housing Corporation, of which \$200 million was for new on-reserve housing and \$200 million was for repair and retrofitting of on-reserve social housing.⁴⁸

To build on this progress, and further address the still dire needs in many First Nations communities, the Green Budget Coalition recommends:

For on-reserve housing:

Invest in 85,000 new housing units at a cost of \$150,000 – \$250,000 per unit and \$25,000 per unit for service connections – \$15 billion total investment in present dollars.⁴⁹ An investment of \$750 million per year would achieve this investment in 15 years.

Investment Required:

\$750 million per year for five years.

For off-reserve housing:

Support for 20,000 units of off-reserve urban Aboriginal housing at \$25,000 per unit for maintenance and mortgage support. This amounts to a five hundred million dollar investment.

Investment Required:

\$100 million per year for five years.

2. Environmental Health

The National Aboriginal Health Organization (NAHO) was closed in 2012, after Health Canada ended its \$4.4 million annual funding,⁵⁰ however the need for ongoing research into Aboriginal health is evident in the major inequities that exist.

According to the 2006 census, 12% of Canadian children live below the Low Income Cut Off poverty level, but this is much higher for Aboriginal children: 1 in 4 Aboriginal children living inside First Nations communities, and 1 in 2.5 Aboriginal children living outside First Nations communities, live in poverty.⁵¹

⁴³ Michael Shapcott, “Housing”, *Social Determinants of Health: Canadian Perspectives*, 2nd edition, 2004, Dennis Raphael (Ed.), Canadian Scholars’ Press, Toronto.

⁴⁴ Gionet, L (2009), *First Nations people: Selected findings of the 2006 Census*. Canadian Social Trends, Summer 2009 (87): 54-60.

⁴⁵ Government Response to the Seventh Report of the Standing Committee on Aboriginal Affairs and Northern Development, 17 October, 2007; Hon. C. Strahl, <http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=3077327&Language=E&Mode=1&Parl=39&Ses=1>; See the Report at <http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=39&Ses=1&DocId=2792835&File=0> (39th Parl. 1st Session)).

⁴⁶ House of Commons, Standing Committee on Aboriginal Affairs and Northern Development, 29 March 2007, *Aboriginal Housing, Seventh Report, 1st Session, 39th Parliament*, including footnote 10.

⁴⁷ <http://www.parl.gc.ca/Content/SEN/Committee/402/citi/rep/rep02dec09-e.pdf>

⁴⁸ <http://www.cmhc-schl.gc.ca/en/corp/nero/nere/2010/2010-04-23-1230.cfm>

⁴⁹ Assembly of First Nations pre-budget submission 2011 – http://www.parl.gc.ca/Content/HOC/Committee/411/FINA/WebDoc/WD5138047/411_FINA_PBC2011_Briefs%5CAssembly%20of%20First%20Nations%20E.html. Note that housing often costs more to build in more northern and remote communities.

⁵⁰ National Aboriginal Health Organization, 5 April 2012, Announcement, <http://www.naho.ca/wp-content/uploads/2012/04/NAHO-Announcement-5-APR-12.pdf>

⁵¹ Campaign 2000 (2008) Report Card on Child and Family Poverty in Canada; Campaign 2000 (2009); Campaign 2000 (2011); (in CMOH report) Statistics Canada 2008, *Aboriginal Children’s Survey, 2006: Family Community and Child Care*; Chief Medical Officer of Health report for 2009 notes that more than 20% of non-Aboriginal children in CMAs (Census Metropolitan Areas) in Canada are in low income families but for Aboriginal children levels are much higher (57% of FN, 45% of Inuit, and 42% of Métis).

The NAHO was a repository for valuable, even irreplaceable Canadian Aboriginal health research. It included a vast repository of Aboriginal traditional knowledge. Further impact to environmental health analysis arises from the 2012 federal budget cut of \$12.5 million per year for the First Nations Statistical Institute.⁵²

Investment required: \$5 million per year, ongoing

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⁵² Aboriginal and Northern Affairs Canada, Budget Highlights 2012, <http://www.aadnc-aandc.gc.ca/eng/1314815272921/1314816043432>

COMPLEMENTARY RECOMMENDATIONS





TACKLING CLIMATE CHANGE

Tackling climate change will involve an ongoing and increasingly meaningful switch away from using fossil fuels such as coal, oil, and natural gas, and towards the efficient use of clean, renewable energy. This switch will not happen overnight. But it has to begin now and be unrelenting for the next three to four decades in order for Canada's resulting greenhouse gas pollution to be reduced virtually to zero by 2050.

The best climate science indicates that in order to have a likely chance of keeping global warming from exceeding dangerous levels, greenhouse gas pollution from rich, industrialized countries such as Canada must be virtually eliminated in the next forty years.⁵³ As such, every misplaced investment that facilitates a greater use of fossil fuels — especially energy infrastructure that will be around for decades — makes the task more difficult by taking Canada away from the path that allows for a full shift away from fossil fuels.

The federal government's role, therefore, is to develop and implement policies that will facilitate that transition, by reducing the amount of energy we need to power our economy, and shifting from dirty fossil fuels to the efficient use of renewable energy. The climate change-related policies presented in this document — funding sustainable energy programs, phasing out fossil fuel subsidies, and introducing carbon pricing — are important steps in the fight against climate change but are insufficient by themselves to get Canada on the path to virtual elimination of fossil fuel use.

To contribute fully to that goal, the federal government would have to implement a comprehensive suite of policies that addresses all the major users of fossil fuel and sources of greenhouse gas pollution. That suite would include broad policies, such as carbon pricing, that encourage the switch to clean, renewable energy. Many more would be targeted

policies that are specific to a sector or activity, including: the electricity sector; the manufacturing sector; the oil, natural gas, and refining sectors; residential, commercial, and institutional buildings; transportation sub-sectors such as personal vehicles, freight transportation, public transportation, rail, domestic and international aviation, and off-road vehicles; the waste sector; the agricultural sector; and energy-consuming goods such as furnaces, water boilers, appliances, and air conditioners.

All of these can be addressed by the federal government. Some, including those in this document, would require budgetary and fiscal measures. Others are best addressed using regulatory measures, but will nonetheless require budget allocations in order for sufficient capacity to exist within government for developing and implementing those regulations.

Without that full suite of policies to address major GHG sources, Canada will be straying from the path to a stable climate and a sustainable future.

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⁵³ Intergovernmental Panel on Climate Change, analyzed and cited in "A Copenhagen Climate Treaty: A Proposal for a Copenhagen Agreement by Members of the NGO Community", pgs. 16-18.

SUSTAINABLE ENERGY FOR CANADA: FROM RESEARCH TO DEPLOYMENT

Recommendation Summary

Last year, the global market for clean technologies (“cleantech”) reached US\$1 trillion. Countries around the world are investing in innovative and sustainable energy technologies to tap into this huge and growing opportunity. Canada has an excellent resource base for renewable energy and a strong track record of energy innovation. A federal sustainable energy strategy that spans the full spectrum of clean energy development — from support for innovation to financing and through to deployment — would help Canada compete with the leaders. This recommendation includes five targeted initiatives that encompass each phase of the clean technology spectrum.

Specifically, the proposed strategy includes:

Support for Innovation

1. Fostering innovation in energy storage

Large-scale power storage is seen by many as one of the most important technological developments that will be required world-over in the coming years. Canada already boasts one of the largest electricity systems in the world, and could become a global leader in energy storage innovation. Significant strategic investments in energy storage — at a similar order of magnitude to the game-changing federal investments in carbon capture and storage — would help to create a more reliable electricity system in Canada while enabling the increased deployment of renewable energy.

Target: \$100 million per year for the next five years.

2. Increased investment in Sustainable Development Technology Canada

Sustainable Development Technology Canada (SDTC) has a proven track record of early investments that have helped many small- to medium- sized Canadian businesses commercialize and bring to market new technologies that deliver economic, environmental and health benefits to Canadians. To help bring Canadian cleantech innovation to market, SDTC will need a recapitalization of \$500 million by 2017.

Target: \$100 million per year for the next five years.

Financing Energy Efficiency

3. Supporting “Green Energy Bonds” to increase private investment in low-carbon initiatives

The creation of new green bond instruments would create a pool of capital for low-interest revolving loans that would target energy efficiency and clean energy development. A lack of access to capital for low-carbon initiatives is a key barrier to the development of clean energy. The Government of Canada should help to

create a \$5 billion fund by seeding it with \$100 million per year for five years. Private investment would be targeted to build from this capital to reach a \$5 billion revolving fund that would generate returns for investors based on clean energy development.

Target: \$100 million per year for five years.

Deploying Cleaner Energy and Increasing our Energy Productivity

4. A National Green Homes Strategy to build on energy efficiency successes in Canadian houses

To align with ambitious initiatives in the U.S. and U.K., Canada needs a comprehensive strategy to have 100 per cent of its existing housing stock retrofitted by 2030. Canada can begin by aiming for 15 per cent by 2015. The first phase should feature strategic investments in residential energy efficiency that are focused on low-income households, building on Budget 2011's \$400 million one-year funding.

Target: As an initial part of a Green Homes Strategy, the Government of Canada should invest \$250 million per year for five years to improve the energy efficiency of existing homes, focusing on lower-income households.

5. Securing Arctic and remote communities' local energy supply

A Northern Wind Incentive Program (NorWIP) that targets remote communities could replace over 300 million litres of diesel fuel imported and burned in the Arctic every year. This program would also help stabilize long-term energy costs using Canadian-developed technology and complement the Government of Canada's 2011 renewal of the ecoENERGY for Aboriginal and Northern Communities Program.

Target: \$12 million per year for five years to support the deployment of wind hybrid systems in remote communities.

Total Recommended Investment (all 5 programs): \$562 million per year for five years

Background and Rationale

1. Fostering innovation in energy storage

Over the past decade, the federal government has played an important role in advancing renewable energy in Canada. Beginning with the Wind Power Production Incentive in 2002, which was expanded through the ecoENERGY for Renewable Power program in 2007, Canada's federal government successfully acted as a catalyst in helping emerging technologies move into broad markets across Canada.

The federal government can build on its success by making near-term investments to spur long-term results in clean energy innovation. Strategic investments in energy storage would help build Canada's reputation in the clean energy economy, and provide support across the country to help achieve the federal government's laudable goal of generating 90 per cent of our electricity from non-emitting sources by 2020.⁵⁴

Large-scale power storage is one of the most important technological developments that will be required to deliver clean energy at scale, and Canada has an opportunity to play a leading global role.

A 2011 study by Alberta Innovates found that the economics of wind turbines could be improved as much as 42 per cent if the electricity they generate could be effectively stored and sold at times of peak demand.⁵⁵ If electricity generated from the wind, sun, tides, and other variable output sources could be reliably stored, electricity systems would also become increasingly able to integrate higher and higher proportions of clean energy into their local grids.

Canada's expertise in leading storage technologies includes hydro power (pumped storage) and fuel cells and drilling (compressed air storage). The federal government's Clean Energy Fund has supported several innovative projects in the strategic area of electricity storage, such as ElectroVaya's demonstration project with automotive-scale lithium ion

⁵⁴ 2008 Speech from the Throne, <http://www.discours.gc.ca/eng/media.asp?id=1383>

⁵⁵ Alberta Innovates Technology Futures, Energy Storage: Making Intermittent Power Dispatchable, Final Report, Version 1.0, 17 October 2011.

batteries, and NB Power's research on load control in four maritime communities.

Building on lessons from the Clean Energy Fund, a strong RD&D focus on energy storage could play a crucial role in making Canada a leader in energy storage innovation. Failing to act risks missing out on investment and jobs in a burgeoning industry that reduces greenhouse gas emissions while meeting Canada's energy needs.

2. Increased investment in Sustainable Development Technology Canada (SDTC)

Established in 2001, SDTC provides clear value to the Canadian economy, to the environment and to the health of Canadians. It started with a \$490 million grant for the core Sustainable Development Tech Fund and later received \$500 million for a Next Generations Biofuel Fund (NGBF). Their SD Tech Fund will be fully allocated by the end of 2012 with the NGBF on track to be fully allocated by early 2014.⁵⁶

These funds are intended to not only bridge the traditionally under-supported gap between research and commercialization but also to "de-risk" clean technologies by catalyzing private-sector investment and creating the opportunity for commercial success. Since its inception in 2001, SDTC has completed 19 funding rounds, allocating \$560 million to 228 projects.⁵⁷ SDTC's extensive network among private investors has resulted in follow-on-financing of \$2.3 billion into 52 of SDTC's more mature companies. This is a return of more than 14 times the original investment by SDTC. Follow-on financing and other programs have helped SDTC's cleantech companies have a Compound Annual Growth Rate (CAGR) in revenue of 21%, nearly twice as fast as other, non-SDTC cleantech companies.⁵⁸

Canadian research has already led to many innovative and profitable technologies that generated \$9 billion in revenues in 2011, making Canada a strong competitor in the rapidly growing global cleantech industry. However, the reality is that many small- to medium-sized Canadian businesses struggle to innovate. SDTC plays a crucial role in supporting the early stages of these innovative technologies and bringing them to market.

SDTC-funded projects are active in a variety of major Canadian economic sectors, including energy exploration and production, power generations, energy utilization, transportation, agriculture, forestry, wood products and pulp and paper products and waste management areas.

Notably, SDTC's support for oil sands technologies led to \$252 million in investments for projects that improve the economic and environmental bottom line of this growing sector.⁵⁹

This year has seen both the Standing Senate Committee on Energy, the Environment and Natural Resources⁶⁰ and the public policy think tank the Mowat Centre⁶¹ praise the contribution that SDTC has made to advancing a cleaner and stronger economy in Canada. In particular, the Mowat Centre states that SDTC is an exceptional federally-funded program, based on:

"both its longevity and its high degree of effectiveness as measured by outcomes. The organization has a clear mandate to develop the most promising pre-commercial clean technologies, an independent governance structure and operates arms-length from the government. National scope is a strong advantage giving it a unique perspective and awareness of diverse regional capabilities and existing projects, thereby avoiding duplication. The program is widely applauded by stakeholders."⁶²

One recommendation coming out of the federal government's recent expert panel on federal support for research and development in Canada was to "help high growth innovative firms access the risk capital they need through the establishment of new funds where the gaps exist."⁶³ SDTC is already playing this role through its funding of cleantech innovation. Recapitalizing SDTC will demonstrate the commitment of the federal government to closing this innovation gap.

Beyond SDTC's two initial grants, additional funding by the federal government has been inconsistent. This lack of funding certainty will soon limit SDTC's ability to maintain the quality of their operations, thereby limiting cleantech commercialization in Canada. Budget 2012 did not allocate any funding to SDTC.

⁵⁶ 2011 SDTC Annual Report, http://www.sdtec.ca/uploads/SDTC_2011%20Annual%20Report%20final%20web%20-%20en.pdf, page 3.

⁵⁷ Sustainable Development Technology Canada, SDTC Profile (accessed 14 Sept 2012), http://www.sdtec.ca/index.php?page=sdtec-profile&hl=en_CA

⁵⁸ 2011 SDTC Annual Report, http://www.sdtec.ca/uploads/SDTC_2011%20Annual%20Report%20final%20web%20-%20en.pdf, page 9.

⁵⁹ The Globe and Mail, 'A Special Information Feature Brought to You by Devon Canada Corporation', 14 September 2012, Organization supports technologies for economical, efficient and sustainable oil sands production, from "The Future of the Oil Sands" Report, <http://www.theglobeandmail.com/partners/advdevonenergy1012/organization-supports-technologies-for-economical-efficient-and-sustainable-oil-sands-production/article4554973/>

⁶⁰ The Standing Committee on Energy, the Environment and Natural Resources, "Now or never: Canada must act urgently to seize its place in the new energy world order," Senate of Canada, (2012), <http://www.parl.gc.ca/Content/SEN/Committee/411/enev/rep/rep04jul12-e.pdf>

⁶¹ Tatiana Khanberg and Robert Joshi, Smarter and stronger: taking charge of Canada's energy technology future, Mowat Centre (2012) p. 42. <http://mowatcentre.ca/pdfs/mowatResearch/67.pdf>

⁶² Tatiana Khanberg and Robert Joshi, Smarter and stronger: taking charge of Canada's energy technology future, Mowat Centre (2012) p. 42. <http://mowatcentre.ca/pdfs/mowatResearch/67.pdf>

⁶³ Tom Jenkins, Bev Dahlby, Arvind Gupta, Monique Leroux, David Naylor, Nobina Robinson, "Innovation Canada: A Call to Action, Review of Federal Support to Research and Development – Expert Panel Report," (2011), Industry Canada, 148pp.

In recapitalizing SDTC's Tech Fund, the federal government would multiply its investment and encourage clean technologies to create substantive economic, environmental and health benefits for Canada. SDTC-funded projects have contributed positively to export trade and to improving our environment.

The Green Budget Coalition recommends that the federal government begin recapitalizing SDTC at a rate of \$100 million per year for the next five years, beginning in Budget 2013.

3. Supporting "Green Energy Bonds" to increase private investment in low-carbon initiatives

Access to capital can be an ongoing challenge to energy efficiency projects even when they are cost effective in the medium- to long-term. Energy efficiency projects can provide a safe return on investment in the form of energy cost savings, but projects are often stymied by an inability to pay for the upfront costs of retrofits and efficiency measures in new homes and facilities. The creation of "Green Energy Bonds" would reduce the costs and risks of accessing capital.

Green Energy Bonds would engage the public by raising capital for clean energy investments, while their government backing would provide stability to investments. The raised capital would be available in a revolving fund to address the market gap that many clean energy and energy efficiency projects face even when they have overall positive rates of return. This gap will accelerate the deployment of pollution-reducing technology, while generating positive returns for those who have invested in the bonds.

The resulting projects will contribute to achieving broader government objectives including its climate change targets and its laudable goal of generating 90 per cent of Canada's electricity from non-emitting sources within the next ten years.

A Green Energy Bond revolving fund would directly involve the Canadian public in a positive way in supporting clean energy. A 2007 poll conducted by Nanos Research found that 82 per cent of Canadians support the idea of a green bond initiative and 62 per cent indicated they would purchase Green Bonds if they carried an interest rate similar to a Canada Savings Bond. The European Investment Bank issued a Climate Awareness Bond in 2007, which can be examined as a precedent for this initiative. Combined with other innovative financing mechanisms, such as facilitating on-bill financing of home retrofits and instruments that allow Canadians to "repay as they save," Canadian green bonds can help address the challenge of securing private investment for good efficiency projects.

4. A National Green Homes Strategy to build on energy efficiency successes in Canadian houses

With only 0.5 per cent of the world population, Canada generates the 6th most electricity of any country in the world. Canadians and businesses have huge opportunities to reduce their monthly costs and to cut pollution by becoming more energy efficient. Efficiency is the cleanest, most affordable, and fastest way to make more energy available to our economy. The federal government has taken important steps to improve energy efficiency in the past, but there is much to be done, as Canada's energy efficiency was recently ranked second-to-last of 12 major economies.

An efficient economy depends on the efficient use of energy. At home and at the workplace, Canadians are not energy efficient, making household finances and our overall economy vulnerable to price spikes and energy uncertainties. Energy efficiency measures not only reduce the risk exposure to fluctuations in energy prices, but are also some of the most cost-effective ways to reduce pollution. The less energy we use, the fewer fossil fuels we burn, resulting in cleaner air, cleaner water and fewer greenhouse gas emissions. Lowering energy consumption means Canadians will have more capital and discretionary spending power that can be used to invest more productively in the wider economy.

Any program that helps reduce energy costs puts more money in the hands of households and businesses. In other words, it has the same benefit as a permanent tax cut. In a recent study that included four Eastern Canadian provinces, Environment Northeast found that a \$14.5 billion investment over 15 years in cost-effective energy efficiency programs to reduce electricity, natural gas, and heating oil consumption would increase GDP by over \$84.0 billion, and create jobs equivalent to 625,000 job years. The increased economic activity primarily occurs as consumers spent their energy cost savings in the wider economy, and industry reduces the costs of doing business, bolstering competitiveness and generating new investment.⁶⁴

These win-win opportunities for both environmental and economic gains have inspired collaboration and consensus, such as the Canadian Premiers' commitment through the Council of Federation to improve energy efficiency by 20 per cent by 2020 in their respective jurisdictions.

The energy used to heat Canadian homes, run appliances and keep lights on is responsible for about 15 per cent of Canada's total greenhouse gas emissions. Wasted energy (due to inadequate insulation, inefficient lights and appliances, and insufficient weatherproofing) means that Canadians burn more fossil fuels than necessary to keep our homes comfortable. Yet of the over nine million homes in Canada,

⁶⁴ Environment Northeast, *Energy Efficiency: Engine of Economic Growth in Eastern Canada*, May 2012, <http://www.env-ne.org/resources/detail/energy-efficiency-engine-of-economic-growth-in-canada>. The \$14.5 billion investment, and resulting \$84.0 billion increase in GDP and 625,000 job years represent the "mid-range" cost-effective efficiency investment scenario modeled by the study.

only 8 per cent have been retrofitted to improve efficiency as a result of government programs. While these improvements are important, there remains significant work to be done.

Energy costs are particularly challenging for low- and fixed-income Canadians. But while these consumers would see significant benefits from efficiency measures, they are also often least able to afford the initial investment required. (For example, half of all measures for home energy efficiency are directed towards low-income households in the U.K.'s initiative.)

The federal government could play a critical role in leading Canadian energy efficiency efforts, producing tangible benefits that include cost savings for consumers, job creation and economic stimulus. For example, homeowners who conducted retrofits supported by the federal ecoENERGY incentive programs expected to reduce their home energy bills by, on average, 23 per cent.⁶⁵

Looking beyond Budget 2013, a national program should target 15 per cent of existing housing stock retrofitted by 2015, 40 per cent by 2020, and 100 per cent by 2030. This strategy would bring Canada in line with similar efforts in the U.S. and the U.K.

In addition, the focus of existing energy efficiency programs needs to be expanded to include a full suite of support measures. This includes energy labelling, financing options that allow homeowners to pay for retrofits out of future energy savings, and training and certification of renovators to ensure quality control. The EnerGuide Home Rating System needs to be strengthened and maintained without a break. A home retrofit incentive program should be re-launched, with more targeted incentives and initial audits made available free of charge. Natural Resources Canada should prioritize incentives that target longer-payback items and encourage fuel switching to low-carbon energy sources as well as major appliance upgrades.

5. Securing Arctic and remote communities' local energy supply

Canada was once a leader in developing wind energy technology for remote communities, but has recently lost this lead to jurisdictions such as Alaska and Australia. It was encouraging to hear the Government commit to promoting the "deployment of clean energy in Aboriginal and northern

communities" in the June 2011 Speech from the Throne.⁶⁶ There is an important opportunity to build on some of the early capacity Canada has developed, while improving energy security and reducing long-term energy costs in remote and northern communities. Secure energy supplies in remote communities will help to ensure long-term Arctic sovereignty.

While the Government of Canada has already made an investment in clean energy for Canada's North through the ecoENERGY for Aboriginal and Northern Communities Program (EANCP) from 2007 to 2011, and then through a renewed program that is running from 2011 to 2016,⁶⁷ a dedicated renewable energy fund is an important complement to those initiatives.

A dedicated fund supporting wind, solar and hydro technologies would provide the predictability and specificity needed to allow Northern communities to successfully plan and execute a transition to clean energy. A targeted program of sufficient size would allow communities to build capacity, create jobs, and support North-North research and training.⁶⁸ A targeted renewable energy fund has produced impressive results in Alaska, and there is strong community and stakeholder support for clean energy in northern and remote communities.

In particular, wind energy represents a significant opportunity for Canada's northern, remote and Aboriginal communities. Many of these communities are currently dependent on diesel-powered electricity generation that is expensive, polluting and leaves communities at the whim of import prices and long-term availability. While wind-diesel hybrid systems have been operating from Alaska to Antarctica for over a decade, projects in Canada's remote communities have not benefitted from traditional federal incentive programs for wind energy because these programs did not recognize the costs associated with work in small, northern and remote communities. Budget 2013 offers an opportunity to remedy this gap via a targeted incentive program.

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⁶⁵ Natural Resources Canada, Report on the Review of Clean Energy Initiatives, 25 March 2011.

⁶⁶ Speech from the Throne, June 3, 2011, <http://www.speech.gc.ca/eng/media.asp?id=1390>

⁶⁷ The EANCP was renewed in Budget 2011 with \$20 million for 5 years (2011-16) to fund clean energy projects in Aboriginal and Northern communities. Aboriginal and Northern Development Canada, "ecoENERGY for Aboriginal and Northern Communities Program 2011-16", <http://www.aadnc-aandc.gc.ca/eng/1316192293636/1316192352390>

⁶⁸ I.e., because numerous Northern communities would be simultaneously deploying similar clean energy technologies, communities could learn from each other rather than relying on outside expertise.

SUBSIDY AND PRICING REFORM: FUNDAMENTAL FOR A SUSTAINABLE CANADIAN ECONOMY

A truly sustainable Canadian economy would improve the lives of Canadians and the health of our planet in an ongoing, integrated fashion. A sustainable economy would recognize that conserving and protecting natural systems is critical to our ongoing prosperity, and that the health of our economy is “inextricably linked” to the health of our environment, as Minister Flaherty has noted.⁶⁹

One of the fundamental requirements for making a successful and efficient transition to a sustainable economy is ensuring that governments’ fiscal policies support – and not hinder - the achievement of Canada’s sustainability objectives.

Two fiscal strategies are of particular importance:

- 1) “Levelling the playing field” for natural resource exploration and development through ecological subsidy reform; and
- 2) Ensuring market prices “tell the environmental truth” through environmental pricing reform.

Adherence to the “polluter pays” principle⁷⁰ is central to both of these strategies.

1) Ecological Subsidy Reform

Firstly, governments need to “level the playing field” for natural resource exploration and development so that the fiscal treatment of natural resources is equitable, or else that fiscal policies favour resources whose life-cycle and human health impacts are the most positive. This should include consideration of conservation and recycling options.

The first step in implementing such ecological subsidy reform is to remove any existing preferential treatment (“subsidies”) for energy sources which are non-renewable or whose development or use is significantly environmentally-damaging.

The federal government has made important progress in this area in *Budgets 2007, 2011 and 2012* through a series of commitments addressing the oil sands and mining, and supporting tax neutrality and responsible resource development.⁷¹

This document outlines the most important next steps in ending such counterproductive subsidies, regarding tax subsidies in Subsidy Reform in the Extractive Industries, and regarding off-book accident liabilities in Hidden Liabilities in the Arctic Offshore and Nuclear Power. The subsidies identified in these recommendations are, collectively, economically inefficient, financially risky, and counterproductive to sustainable energy policy.

⁶⁹. Department of Finance Canada, 14 September 2011, “Government of Canada Promotes Economic Prosperity Through Support for Small Business”, <http://www.fin.gc.ca/n11/11-080-eng.asp>

⁷⁰. In Budget 2005, the Government defined “polluter pays” as meaning that “the polluter should bear the costs of activities that directly or indirectly damage the environment. This cost, in turn, is then factored into market prices.” [<http://www.fin.gc.ca/budget05/bp/bpa4e.htm>] On May 29, 2007, as Environment Minister, the Hon. John Baird re-affirmed the government’s commitment to this principle by telling the House of Commons Standing Committee on the Environment and Sustainable Development that the government “believes that the polluter should pay.” <http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=2977081&Language=E&Mode=1>

⁷¹. Budget 2007 initiated the phase-out of the 100% accelerated capital cost allowance (ACCA) for the oil sands; Budget 2011 reduced the deduction rates for intangible capital expenses in oil sands projects to those applicable to the conventional oil and gas sector; Budget 2012 removed the Atlantic Investment Tax Credit for mining, and phased out the Corporate Mineral Exploration and Tax Credit.

2) Ensuring Prices “Tell the Environmental Truth”

Market prices do not currently “tell the environmental truth.” Indeed, as Sir Nicholas Stern has pointed out, “climate change is the greatest market failure the world has seen.”⁷²

Canada’s economy will only maximize benefits for Canadians and be truly sustainable when market prices do tell the environmental truth by reflecting true values – today and in the future – as well as the life-cycle costs and benefits – financial, environmental, and social – of their production and consumption.

When measuring the life-cycle impacts of specific goods and services, we generally consider the costs and benefits associated with resource depletion, waste creation, pollution emissions, and ecological restoration resulting from the development, production, transportation, sale, use, and disposal of those goods and services. However, the full spectrum of such costs and benefits is generally not represented in the market price of goods and services, and instead the remaining “externalities”⁷³ are borne by society at large. As a result of this imbalance, businesses and consumers tend to over-consume (or, in some cases, under-supply) particular goods and services as their market prices are artificially low.⁷⁴

Economists refer to this situation as a “market failure” because there is no market for the externalities, and the market for the goods and services is distorted. Economic theory states that when prices reflect true costs, an optimal level of consumption takes place, and society’s welfare is maximized.

Canada’s economy suffers from two major types of ongoing market failure: (1) we are over-consuming, and thus inefficiently utilizing, our non-renewable natural resources; and (2) we are over-polluting our air, water, and soil — and through them our bodies — well beyond capacities to absorb this pollution without notable harm.

As a result of these market failures, when businesses and citizens make strategic operational and purchasing decisions to favour human health and the environment, they often find themselves incurring increased costs in order to do so as

these goods and services are competing with more harmful options whose prices are artificially low. This imbalance is counterproductive to achieving a healthier sustainable society because it sends the wrong signals to all of us as economic decision-makers.

Environmental Pricing Reform

The Green Budget Coalition firmly believes that Canada’s prosperity requires that market prices for goods and services accurately reflect the true value of resources required to produce them, today and in the future, as well as the full costs (including risks of major accidents) and benefits to the environment and human health associated with their development, production, transportation, sale, use and disposal.

This approach is often called environmental pricing reform (EPR), and could be implemented through a mix of market-based instruments, such as taxes, fees, rebates, credits, tradable permits and subsidy removal.

Such EPR policies create many benefits. They preserve natural resources for higher value uses, reward environmental leaders amongst businesses and citizens, and stimulate environmental innovations with global export potential. Overall, they expedite the development of healthier, more sustainable economies, where economic success brings concurrent environmental and human health benefits, and where self-interested economic choices are more frequently those resulting in the most social and environmental benefits. Furthermore, such policies provide enhanced fairness to citizens and business through the “polluter pays” principle, by forcing polluters to pay for the harm they cause.

Canada lags behind most other industrialized countries — including the United States and Australia — in utilizing market-based instruments, particularly financial disincentives.

However, the GBC has commended the government for some important fiscal actions, including steps towards imposing a price on greenhouse gas emissions through a cap-and-trade system, and the introduction of a modest, temporary carbon tax as part of a revenue-neutral “feebate” structure for new automobile purchases.⁷⁵

⁷² October 30 2006, Press note: Publication of the Stern Review on the Economics of Climate change, http://www.hm-treasury.gov.uk/newsroom_and_speeches/press/2006/press_stern_06.cfm

⁷³ “Externalities” refers to costs or benefits, resulting from an economic activity, that impact an individual or entity not involved in determining that activity, and which are not reflected in market prices. Common environmental externalities include air, water and noise pollution, as well as the stewardship of wetlands and forests.

⁷⁴ Common examples of over-consumed goods include oil and natural gas (where prices do not usually reflect pollution impacts on health and the environment), roads for transportation (where usage fees are rarely charged), and imported fruits and vegetables (where prices do not reflect the environmental and health costs of the transportation-related pollution). Under-supplied services include forests (where the environmental and health benefits are rarely compensated financially).

⁷⁵ See Green Budget Coalition, 2007, 2007 Federal Budget – Analysis of Environmental Measures, http://www.greenbudget.ca/pdf/Budget_Analysis_2007.pdf, p. 1-3, 6. Budget 2007 introduced the Vehicle Efficiency Incentive Structure. It used a “feebate” structure that combined a modest carbon tax - a Green Levy of up to \$4,000 on new gas guzzling vehicles - with a rebate of up to \$2,000 for purchases of highly fuel-efficient vehicles and of “E85” flex fuel vehicles. The structure was intended to be roughly revenue-neutral, with the levy revenues exceeding the rebate cost. <http://www.budget.gc.ca/2007/pdf/bp2007e.pdf>, p. 66-70, 436-438. Budget 2007 documents also acknowledged that, “emissions trading will be an important component of a market-driven approach to reducing GHG emissions and air pollutants.” Department of Finance Canada, 19 March 2007, The Budget Plan 2007 - Aspire: To a Stronger, Safer, Better Canada, p. 35. Budget 2008 allocated \$66 million to “set up key features of the regulatory regime [for industrial air emissions], including an electronic tracking system for units traded in the carbon market, a single-window reporting system for industry, an industry-supported technology fund to invest in emission reduction projects, an offset system to finance emission reduction projects in non-regulated sectors, and better modelling of air quality.” Department of Finance Canada, 26 February 2008, The Budget Plan 2008 – Responsible Leadership, p. 162. <http://www.budget.gc.ca/2008/pdf/plan-eng.pdf>

The most important EPR actions available to the federal government are: (1) implementing a robust price on greenhouse gas emissions (a “carbon price”; see the Carbon Pricing recommendation later in this document); (2) removing liability caps and raising minimum insurance levels for nuclear power and offshore oil operations (See Hidden Liabilities in the Arctic Offshore and Nuclear Power, later in this document) and (3) developing and implementing a comprehensive environmental pricing plan, in coordination with provincial, territorial and municipal governments.

Reducing Investment Requirements through Subsidy and Pricing Reform

To achieve a sustainable economy and society, while minimizing costs to Canadians, strategic investments will also be required – particularly in energy efficiency, renewable energy, intra- and inter-city transit, and water and wastewater infrastructure, (all of which are addressed by recommendations in this document).

However, in many cases, the required scale of these government investments can be significantly reduced by implementing ecological subsidy reform and environmental pricing reform measures, as discussed above. For example, the costs of accelerating energy efficiency and renewable

energy can be reduced by implementing a robust carbon price, while removing the government’s existing tax subsidies and off-book liabilities for fossil fuels and nuclear power will make private investments in renewable energy and energy conservation more attractive. Net transit operating costs can be significantly reduced by implementing fair disincentives to driving, particularly a strong carbon price and road user pricing. The need for building expensive new water and wastewater infrastructure can be reduced by raising water usage fees to better cover the costs of the related infrastructure.

In addition, for fiscal policy to support sustainability, federal financial transfers to provincial and municipal governments, and subsidies to industry, should be made conditional on achieving defined environmental outcomes, with some inter-governmental transfers made conditional on implementing true-cost pricing measures (such as for road use).

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CARBON PRICING: ACCELERATING PROGRESS TOWARDS A LOW-CARBON ECONOMY

Recommendation Summary

To accelerate Canada's transition to a low-carbon economy and achieve Canada's climate change commitments, the federal government should move immediately to implement a well-designed, transparent and environmentally rigorous carbon pricing system. Such a system could readily complement the government's existing sector-by-sector regulatory approach.

Revenue Implications

The revenue implications of a carbon pricing system are highly dependent on policy design choices. Research carried out by a number of organizations, however, suggests that annual revenues in the order of \$18 billion to \$50 billion can be expected.⁷⁶ The carbon pricing systems already in place in British Columbia, Alberta and Quebec collect \$1.2 billion, \$74 million and \$200 million annually for their respective governments.

The scale of such revenues means that the question of how the money is "recycled" becomes a critical factor. The Green Budget Coalition recommends five priority areas for the use of carbon pricing revenues:

- Helping to meet Canada's greenhouse gas emission reduction targets,
- Helping to meet Canada's international climate finance obligations,
- Protecting low income Canadians,
- Protecting the international competitiveness of trade-exposed manufacturing sectors that are demonstrably at risk of "carbon leakage"⁷⁷, and
- Compensating households in regions at risk of undue impacts (from carbon pricing).

Additional revenue could be invested in government priorities ranging from deficit reduction, to business and personal income tax cuts, to general revenues.

Background and Rationale

Carbon pricing, or putting a price on greenhouse gas (GHG) emissions through a carbon tax or cap-and-trade system, can be one of the most powerful tools we have in the fight against climate change and in Canada's transition to a competitive, low-carbon economy.

An increasing number of jurisdictions are implementing carbon pricing. In Canada, both Quebec and BC have carbon taxes. Cap-and-trade systems have been in place in the European Union since 2005 and the Northeast U.S. since 2009. California and Quebec will have a cap-and-trade system up and running by January 2013. Australia's parliament implemented a carbon tax in July 2012.

If well-designed, a carbon tax or cap-and-trade system can be a powerful incentive to encourage companies and households to pollute less and invest in cleaner choices, accelerating the shift away from fossil fuels and towards a clean energy economy. That price can be applied evenly across the economy, thereby empowering Canadians and Canadian businesses to find the most cost-effective ways to reduce greenhouse gas emissions in the country. Research carried out by organizations like Resources for the Future, a Washington, DC based economics think tank, shows that using market-based instruments like carbon pricing can substantially reduce the cost (i.e., by 2/3) of achieving an environmental policy objective in relation to command-and-control policies designed for the same outcome.⁷⁸

⁷⁶ Sustainable Prosperity Policy Brief, Carbon Pricing, Climate Change, and Fiscal Sustainability in Canada, December 2010. <http://www.sustainableprosperity.ca/article586>

⁷⁷ Where production could be relocated to a jurisdiction with less stringent emission controls.

⁷⁸ Resources for the Future, July 2011, Retail Electricity Price Savings from Compliance Flexibility in GHG Standards for Stationary Sources, <http://www.rff.org/RFF/Documents/RFF-DP-11-30.pdf>

Co-benefits of Carbon Pricing

In addition to its environmental and economic benefits, a carbon pricing policy creates opportunities to achieve a number of co-benefits.

The first of these relates to fiscal policy. The revenues generated by a carbon price translate into new fiscal resources that governments can use to achieve important fiscal policy reform objectives. One of these opportunities is the ability to promote competitiveness of the Canadian economy by using carbon-pricing revenues to reduce corporate and income taxes. A model for this is British Columbia's experience with a carbon tax, which has allowed it to reduce corporate income tax rates to levels that make it among the most tax-competitive jurisdictions in North America. A second fiscal policy opportunity created by carbon tax revenues relates to the looming "fiscal gap" created by aging populations and the resulting drop in income tax revenues and increased demand for social services. Revenues generated through a carbon tax can help fill that gap in a sustainable way, because they are based on consumption rather than income.

The second important co-benefit for Canada of a carbon pricing policy is in the area of innovation and productivity. Both are areas of perennial concern, inasmuch as they are key determinants of our competitiveness and long-term prosperity. The Canadian government has devoted considerable financial and policy resources to addressing our lagging performance in both, with mixed results.⁷⁹

Innovation and, especially, productivity are complex problems with multiple drivers and solutions. But carbon pricing is an untapped policy instrument in this regard, and one that Canada would be well advised to consider. The Organisation for Economic Cooperation and Development (OECD) has long advocated the use of environmental taxation to increase innovation, and has carried out research proving that market-based environmental policies can improve innovation in an economy.⁸⁰ Similar work carried out by Sustainable Prosperity in partnership with Roger Martin, one of Canada's foremost experts on productivity, has made the case for using carbon pricing to promote innovation and productivity in the Canadian economy.⁸¹

For more details on the Green Budget Coalition's views on carbon pricing, please see the GBC's Recommendations documents for Budget 2011 (on revenue recycling specifically) and for Budgets 2008 and 2009 (more comprehensive).⁸²

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⁷⁹. TD Economics, *The Productivity Puzzle: Why Is Canada's Record so Poor and What Can Be Done About It?*, 2 June 2010. <http://www.td.com/document/PDF/economics/special/td-economics-special-ab0610-productivity.pdf>

⁸⁰. Organisation for Economic Cooperation and Development, *Taxation, Environment, and Innovation*, October 2010. http://www.oecd.org/document/6/0,3746,en_2649_34281_46091974_1_1_1_1,00.html

⁸¹. Sustainable Prosperity Policy Brief, *Carbon Pricing, Innovation, and Productivity*, June 2010. <http://www.sustainableprosperity.ca/article344>

⁸². Available from http://www.greenbudget.ca/main_e.html

HIDDEN LIABILITIES IN THE ARCTIC OFFSHORE AND NUCLEAR POWER: PROTECTING TAXPAYERS AND THE ENVIRONMENT

Recommendation Summary

The current design of Canada's Arctic offshore and nuclear liability rules leaves governments, taxpayers, communities and the environment vulnerable in the event of a significant accident or spill. The Green Budget Coalition believes that liability should be commensurate with the entire potential costs of a worst case accident and recommends protecting federal taxpayers by:

1. Abolishing the \$40 million absolute liability cap for drilling operations conducted in Canada's Arctic;
2. Removing the \$75 million cap for nuclear reactor operator liability;
3. Raising the minimum accident insurance level for nuclear operators to match those of other western nations; and
4. Ending the protection of reactor suppliers and vendors from liability if negligent.

Financial Savings

In the case of an oil spill or nuclear accident, the federal government could be left responsible for damages and clean-up costs in the billions of dollars, because of the caps on liability. Removing these caps and modifying the civil liability regime more generally, as other countries have done for nuclear accident liability, would eliminate these off-book liabilities by transferring the respective liabilities to reactor operators and those companies operating offshore.

Background and Rationale

Liability rules are a fundamental budget issue because they speak to: a) the adequacy and availability of offshore and nuclear power industry funds to pay for post-spill and post-accident response clean up and associated damages, including potentially massive environmental damages; and b) the financial incentive structures established by the respective liability regimes, which directly impact the behaviour of the offshore and nuclear power industries.

In 2011, the federal government took an appropriate step in levelling the playing field for green energies by privatizing Atomic Energy of Canada Limited. By committing to no additional direct or indirect subsidies for reactor projects, the

federal government protected taxpayers and aligned federal policy with the "polluter pays" principle.⁸³

Arctic Offshore Liability

The liability regime for drilling operations conducted in Canada's Arctic is established pursuant to s.26(1)(a) and 26(2)(a) of the *Canada Oil and Gas Operations Act* (COGOA) and the *Oil and Gas Spills and Debris Liability Regulation*, SOR/87-331, as well as through the Arctic Waters Pollution Prevention Act (AWPPA). It is important not only because of how it shapes and limits any claims for compensation (post-spill), but also because of how it creates a perverse incentive for offshore companies to pursue excessively risky activities (pre-spill), knowing they will only bear the full cost of liability (beyond the \$40 million absolute liability cap) to the extent that negligence is established. Abolishing the liability cap is one major piece among a broader set of required offshore liability reforms that will encourage companies to weigh the full potential liability and make better risk decisions.

Following the Macondo blowout in the Gulf of Mexico in 2010, the U.S. Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) calculated the cost of a catastrophic spill resulting from a deepwater blowout in the

⁸³ See (identical) footnotes in the *Executive Summary* and the *Subsidy and Pricing Reform* section, earlier in this document.

Gulf to be about \$16.3 billion, resulting primarily from: (1) Natural resource damage to habitat and creatures, (2) infrastructure salvage and cleanup operations of areas soiled by oil, and (3) containment and well-plugging actions plus lost hydrocarbons.⁸⁴ Media reports suggest the actual cost of the Macondo spill could be considerably higher than the above estimates, with the latest reports putting the cost at about \$40 billion.⁸⁵

BOEMRE acknowledged that there is of course a “considerable degree of uncertainty” in estimating the costs of a future spill, given the unknown timing, magnitude, duration and trajectory of such a spill,⁸⁶ and that spill costs “could be much higher if all costs . . . could be monetized.”⁸⁷ BOEMRE’s calculation might provide a suitable starting point for estimating the costs of a major Arctic spill. If drilling is authorized in Canada’s Beaufort Sea, the costs associated with an Arctic spill could also be considerably higher given the additional challenges, such as the potentially increased time to contain a blowout and respond to spilled oil given weather and ice conditions, the reduced amount of local infrastructure, the increased distances to transport equipment and personnel, etc.

In 2010, the Senate Standing Committee on Energy, the Environment, and Natural Resources issued a report that recommends review of offshore liability limits.⁸⁸ In December 2011, the National Energy Board’s *Review of Offshore Drilling in the Canadian Arctic* committed the National Energy Board (NEB) to “working on a framework that will outline financial responsibility requirements for all matters and regions covered by the *Canada Oil and Gas Operations Act*.”⁸⁹ While this is a positive step, the NEB did not provide any significant policy guidance on the broader reform of offshore liability, likely because this is a decision for the Minister of Natural Resources, and not within the NEB’s purview. The GBC understands that Natural Resources Canada is working on a set of options for liability reform, but it is fair to say that the government’s response to this issue has been very slow.

In considering liability reforms, the Government of Canada must reflect upon Canadians’ concerns with liability limits that put the public purse at risk. The polluter pays principle should receive full application in the Arctic offshore, with a view to enhancing incentives for industry to avoid spills and to ensure funds are available for full response, cleanup, restoration and compensation should a spill occur.

The \$40 million liability limit under COGOA and the AWPPA must be eliminated, or raised significantly. In the same vein, the GBC also recommends the elimination (or significant raising) of the \$30 million absolute liability limit established under the Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act and the Canada-Newfoundland Atlantic Accord Implementation Act for offshore operations off Canada’s east coast.

Nuclear Liability

The federal taxpayer also carries a significant contingent liability for damages and clean up costs in the case of a nuclear accident. *The Nuclear Liability Act* (NLA) caps the liability of nuclear operators at \$75 million and either leaves those costs on those harmed by an accident, or transfers the cleanup costs for a nuclear accident from the industry to the federal government in the event of the establishment of a claims commission.

Removing this cap, as other countries have done, would eliminate this off-book liability by transferring the liability to reactor operators.

The Fukushima nuclear accident in 2011 and the Gulf of Mexico oil spill in 2010 have highlighted that catastrophic industrial accidents are a realistic possibility.

However, like the off-shore oil industry, the nuclear industry in Canada has historically enjoyed a cap on its accident liability in case of an accident. In the event of an accident, the federal government will be pressured to pay for clean up and compensation costs above this liability cap, creating an enormous contingent liability for taxpayers.

Internationally, there has been a move to modernize nuclear liability legislation to both require nuclear reactor operators to maintain more appropriate levels of minimum accident insurance and toward the removal of caps on reactor operator liability. This trend can be expected to accelerate in light of the Fukushima disaster in Japan.

During previous Parliaments, the federal government proposed the *Nuclear Liability and Compensation Act* (NLCA) in an attempt to modernize the Nuclear Liability Act, which dates from the 1970s. Instead of removing the cap on reactor operator liability, however, the draft NLCA proposed to simply increase the cap on reactor liability from \$75 million to \$650 million. All potential clean-up and compensation costs above \$650 million would essentially be an off-book taxpayer liability.

⁸⁴ BOEMRE Drilling Safety Rule, October 2010, page 63364. BOEMRE Drilling Safety Rule – Benefit-Cost Analysis, Sep 2010, page 7.

⁸⁵ Guardian story on BP oil spill costs, November 2010.

⁸⁶ BOEMRE Drilling Safety Rule – Benefit-Cost Analysis, September 2010, page 33.

⁸⁷ BOEMRE Drilling Safety Rule – Benefit-Cost Analysis, September 2010, page 63.

⁸⁸ Senate Standing Committee on Energy, the Environment and Natural Resources (August 2010): *Facts Do Not Justify Banning Canada’s Current Offshore Drilling Operations*, page 5, <http://www.parl.gc.ca/Content/SEN/Committee/403/enrg/rep/rep08aug10-e.pdf>

⁸⁹ <http://www.neb-one.gc.ca/clf-nsi/rthnb/pplctnsbfrthnb/rctcfshdrdrllngrww/fnlrprt2011/fnlrprt2011-eng.html>

The revisions proposed to Canada's nuclear liability regime by the NLCA are now outdated, ignoring both lessons from the Fukushima disaster and the best practices of other countries.

The International Atomic Energy Agency (IAEA) has acknowledged unlimited operator liability as an international best practice.⁹⁰ Sweden, Switzerland, Germany and Finland have established unlimited operator liability in their domestic legislation. In addition, the United Kingdom, Finland, Belgium are increasing the minimum level of reactor operator insurance to €1.2 billion – approximately \$1.5 billion Canadian.

The Fukushima nuclear disaster has also highlighted a flaw in Canada's nuclear liability regime – the protection of reactor suppliers from liability even if their negligence contributes to an accident. Under the NLA and the proposed NLCA all liability is "channeled" to the reactor operator. This supplier liability protection removes an important incentive for reactor safety and limits the amount of funds available to compensate victims in the event of an accident. Indeed, General Electric (GE) was aware of flaws in containment of the Fukushima reactors it designed, which contributed to radiation releases. Protected from liability, however, GE did nothing to address these flaws.

India's new nuclear liability legislation ends the practice of channelling. It allows reactor operators to sue suppliers if their negligence contributes to an accident. This provides a greater pool of industry funds to compensate accident victims.

Finally, the Joint Review Panel convened to assess the environmental impacts of building new reactors at the Darlington nuclear site noted that Canada's nuclear legislation contravenes the federal commitment to the polluter pays principle, and recommended that the federal government align its nuclear liability legislation with the polluter pays principle, stating:

The Panel recommends that the Government of Canada update the *Nuclear Liability and Compensation Act* or its equivalent to reflect the consequences of a nuclear accident. The revisions must address damage from any ionizing radiation and from any initiating event and should be aligned with the polluter pays principle. The revised *Nuclear Liability and Compensation Act*, or its equivalent, must be in force before the Project can proceed to the construction phase.⁹¹

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⁹⁰. IAEA Action Plan on Nuclear Safety – Nuclear Liability, 2012, <http://ola.iaea.org/OLA/documents/ActionPlan.pdf>

⁹¹. Joint Review Panel, August 2011, *Environmental Assessment Report – Summary, Darlington New Nuclear Power Plant Project*, <http://www.ceaa.gc.ca/050/documents/51695/51695E.pdf>, page 11.

ESTABLISHING A FEDERAL SAVINGS FUND FOR OIL AND GAS REVENUES

Recommendation Summary

Canada could establish a federal savings fund for oil and gas revenues, following the example of other countries that are heavily dependent on oil and gas exports, like Norway, to:

- Save one-time resource income to generate sustainable prosperity for the future;
- Provide resources to soften the impacts of the boom and bust cycles of resource-dependent economies; and
- Smooth the transition to a clean energy economy by encouraging sustainable technology development and commercialization and workforce transition towards this growing sector.

Revenue Implications

This proposal would, over three to five years, progressively allocate increasing portions of federal corporate income tax from the oil and gas sector into a special federal savings fund, instead of the federal government's general revenue, after which all federal oil and gas corporate income tax would be diverted to this fund. Canada's entire oil and gas sector paid \$2.7 billion in federal income tax in 2009–2010 (1.2 per cent of total federal government revenues for that fiscal year).^{92,93,94}

As federal oil and gas subsidies are phased out, the additional revenues could offset the corporate income tax going into the savings fund. In time, the revenue sources for the federal savings fund could expand to include corporate taxes from all non-renewable resource extraction in Canada.

The scale of macroeconomic benefits created by putting downward pressure on the Canadian dollar, lessening the impacts of commodity boom and bust cycles and smoothing the transition to a clean energy economy would be much greater than any reduced capacity due to re-allocating corporate tax revenues out of general revenues.

Background and Rationale

Through corporate income taxes paid by oil and gas producers, the federal government is a direct beneficiary of the economic growth associated with the oil and gas industry. But as the relative contribution from this activity grows, so grows the risk to the government given the volatility of the global oil and gas marketplace and its cyclical booms and busts. As former federal cabinet minister David Emerson has noted, "Energy and natural resource markets are notoriously volatile. The more government spending relies on such revenues, the more fiscal volatility and instability becomes embedded in fiscal frameworks."⁹⁵ Alberta and Saskatchewan, the two provinces most reliant on energy revenue, also have the worst track record for meeting budget targets.⁹⁶

In other countries that are heavily dependent on oil exports, like Norway, non-renewable resource funds have already been established. With over \$590 billion in assets, Norway's Government Pension Fund – Global, now one of the largest stock owners in Europe, has been both financially successful and popular with Norwegians.

⁹² This \$2.7 billion includes oil and gas extraction and support activities and is net, after approximately \$1.3 billion in federal tax credits and deductions.

⁹³ Statistics Canada, *Financial and Taxation Statistics for Enterprises*, 61-219-X (2009), 53. <http://www.statcan.gc.ca/pub/61-219-x/61-219-x2010000-eng.htm>

⁹⁴ Finance Canada, *Annual Financial Report of the Government of Canada: Fiscal Year 2009–10*, <http://www.fin.gc.ca/afr-rfa/2010/report-rapport-eng.asp#a2>

⁹⁵ David Emerson, "Reversing the Curse: starting with energy," *Policy Options* (February 2012), 53.

⁹⁶ Colin Busby and William B.P. Robson, "Target Practice Needed: Canada's 2010 Fiscal Accountability Rankings," *Backgrounder 129*, C.D. Howe Institute, 2010, cdhowe.org/pdf/backgrounder_129.pdf

The purpose of these funds can be three-fold:

- To save for the future (as non-renewable revenues will inevitably decline over time),
- To be drawn from as needed to smooth out the economic boom and bust cycles that are typically associated with economies whose currency depends on the volatile price of oil or other commodities, and
- To smooth the transition to a clean energy economy by supporting clean energy technology development and deployment, and improving workforce transition towards this growing sector.

Clearly, Canada would benefit from each of these objectives. Moreover, Canada can act as a role model for provinces in responsible natural resource wealth management. As provinces control resource royalties, a larger source of income than corporate income tax, there would be even greater benefits for the Canadian economy if provincial governments created savings funds.

This initiative is supported by other notable policy organizations. In 2012, both the OECD and the Institute for Research on Public Policy publicly advanced that a federal savings fund from corporate taxes could have positive macroeconomic effects for Canada.^{97,98}

The Green Budget Coalition suggests that, starting with Budget 2013, the federal government:

- Establish a federal savings fund,
- Develop a model to estimate and allocate federal revenue associated with oil and gas development,
- Establish criteria for the fund, including holding assets in foreign currencies, and when and how the fund can be drawn down,
- Implement a phase-in period for the allocation of revenues associated with the exploitation of non-renewable resources, and
- Once implemented, expand to other non-renewable resource revenues.

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⁹⁷. Mohammad Shakeri, Richard S. Gray and Jeremy Leonard, Dutch Disease or failure to compete? A Diagnosis of Canada's Manufacturing Woes, IRPP Study No. 30. (Institute for Research on Public Policy, 2012), p. 20, http://www.irpp.org/pubs/IRPPstudy/IRPP_Study_no30.pdf

⁹⁸. Ora Morrison, "Sovereign wealth fund would take care of Dutch disease: OECD," June 15, 2012. <http://m.theglobeandmail.com/report-on-business/economy/economy-lab/sovereign-fund-would-take-care-of-dutch-disease-oecd/article4265658/?service=mobile>



FUNDING CANADA'S INFRASTRUCTURE FUTURE

Recommendation Summary

The Government of Canada's Building Canada plan has created major ongoing benefits for Canadians by expanding and modernizing critical infrastructure in municipalities from coast to coast to coast. However, Canada's municipal infrastructure is still in need of massive reinvestment and upgrading, and current infrastructure funding must be continued.

The Government of Canada's promised Long-Term Infrastructure Plan (LTIP)⁹⁹ is a unique opportunity to build on the Building Canada plan's successes and to collaborate with provincial, territorial, and municipal governments to strengthen and re-envision Canada's infrastructure to set us on a competitive and resilient path for the twenty-first century and beyond.

Integrating innovative green solutions into a new era of infrastructure renewal can save energy, leverage nature's services to complement hard infrastructure, and provide co-benefits for communities (e.g., improved outdoor recreational opportunities), all while saving money and increasing benefits per dollar spent.

To ensure the Long-Term Infrastructure Plan maximizes its potential for Canadians, the Green Budget Coalition recommends that the:

1. LTIP provide, conditional on matching provincial/territorial and municipal funds,¹⁰⁰ a minimum of:
 - \$800 million per year for water and wastewater management; and
 - \$1.3 billion per year for public transit.

2. Following criteria be included in the design of the LTIP, either through the carve-out of dedicated funds or as eligible categories within funds:
 - Providing access to safe, healthy drinking water;
 - Meeting Canada's new Wastewater System Effluent Regulations;¹⁰¹
 - Sustainable transportation;
 - Energy sustainability;
 - Adapting to climate change; and
 - Utilising natural infrastructure.

To address shorter-term needs, the GBC recommends that Budget 2013:

- Provides an additional \$800 million in 2013-14 for water and wastewater systems, conditional on matching provincial/territorial and municipal funding.

⁹⁹. See Towards a new Long-Term Infrastructure Plan, <http://www.infrastructure.gc.ca/plan/plan-eng.html>

¹⁰⁰. The GBC recommends that exceptions to this matching requirement be permitted where local communities clearly do not have the economic potential to provide those funds.

¹⁰¹. Announced July 18, 2012. See "Harper Government increases protection for Canada's water quality", <http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=601AD687-480E-4EB9-8FDD-6027B021634A>

Federal Investment Required (additional to Gas Tax Fund allocations):

In Long-Term Infrastructure Plan, beginning in 2014:

Water and wastewater management:	\$800 million per year
Public transit:	\$1.3 billion per year

For 2013-2014

Water and wastewater management:	\$800 million
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Benefits for Canadians

- Clean drinking water contributes to the health of Canadians, reducing costs to the healthcare system and economy.
- Upgraded storm and wastewater management systems will: meet higher health and environmental standards; increase jobs; and spur technological innovation.
- Public transit investments result in improved lifestyle and productivity for consumers and businesses through reduced congestion. Transit also helps to reduce air pollution and greenhouse gas emissions from transportation.
- Improved usage of tax dollars.

Background and Rationale

By 2014, the Government of Canada's Building Canada plan (BCP)¹⁰² will have allocated about \$33 billion since 2007 to important public infrastructure from coast to coast to coast. The benefits created by the BCP's funding are numerous, and include – in communities across the country – new jobs, cleaner air and water, improved health and quality of life, reduced costs to the healthcare system, healthier lakes and rivers, improved transit and road infrastructure, and improved economic productivity.

The Green Budget Coalition commends the Government of Canada for promising a new Long-Term Infrastructure Plan, to continue to bring these benefits to Canadians. The GBC is also pleased that both the Government of Canada and the Federation of Canadian Municipalities (FCM) are undertaking consultations regarding the infrastructure framework.¹⁰³

The structure of the LTIP will play a critical role in how effectively taxpayers' dollars are utilized, and how effectively the LTIP's potential to underpin the economic, environmental and social prosperity of Canadians is realized.

To support the successful realization of those objectives, the Green Budget Coalition recommends that the following elements be central to the LTIP.

1. Core Objectives and Criteria

The Government of Canada has important decisions to make about the structure and categories of the Long-Term Infrastructure Plan (LTIP). The Green Budget Coalition recommends that the following criteria are included in the design of the LTIP, either through the carve-out of dedicated funds or as eligible categories within funds (*specific minimum annual allocations are recommended for water and wastewater management, and for sustainable transportation, detailed in the following sections*):

- Safe, healthy drinking water including source water protection;
- Meeting Canada's new Wastewater Effluent Regulations;
- Sustainable Transportation. This includes public transit (see below) and infrastructure to promote active transportation and more sustainable community design;
- Advancing energy sustainability through conservation, demand management, renewable energy and energy efficiency;
- Adapting to climate change;
- Support for capacity-building and municipal planning for energy sustainability; and
- Expanding and strengthening natural infrastructure including wetlands protection and restoration.

Integrating innovative green solutions into a new era of infrastructure renewal can save energy, leverage nature's services to complement hard infrastructure, and provide co-benefits for communities (e.g., improved outdoor recreational opportunities), all while saving money and increasing benefits per dollar spent.

¹⁰² See <http://www.infrastructure.gc.ca/prog/index-eng.html> for details on Infrastructure Canada's programs.

¹⁰³ According to the FCM, "With the expiry of the Building Canada Plan in 2014, nearly 40 per cent of federal investments in our cities and communities will end." See <http://www.fcm.ca/home/issues/infrastructure/infrastructure-investments-tomorrow.htm>

The Green Budget Coalition supports equal cost-sharing between the federal, provincial/territorial, and municipal governments as a central principle of the LTIP. However, exceptions to this requirement are merited where local municipalities clearly lack the necessary financial capacity or potential.

2. Water and Wastewater Management

Nationally, aging and failing water infrastructure is a persistent challenge for Canadian communities. Much of the water supply infrastructure in Canadian communities is over fifty years old. Outdated wastewater treatment plants and antiquated combined sewer overflow systems allow unacceptably high levels of pollutants to enter Canadian waterways. Further, traditional infrastructure is poorly suited for adaptation to extreme climate events (i.e., flood and drought).

Replacing and repairing degraded and aging pipes, pumps and treatment systems would ensure Canadian communities are better able to serve growing populations by avoiding flooding, providing safe drinking water, and reducing pollution discharge from waste- and stormwater systems to the nation's rivers and lakes. At the same time, the most cost-effective strategies for water and wastewater *management* will involve more than just pipes and pumps.

Under Canada's Economic Action Plan and Building Canada plan, some stimulus funding was provided for drinking and wastewater infrastructure. Over the longer-term, sustained funding will be required to help address the estimated \$40 billion cost of upgrading water and wastewater systems across the country.¹⁰⁴

These investments can also spur innovation and job growth in Canada's water technology sector. According to the

Conference Board of Canada, there is a US\$360 billion global industry in water management.¹⁰⁵

Recommended Minimum: \$800 million/year

3. Sustainable Transportation – Public Transit

Benefits for Canadian Families of Investing in Public Transit
Each year, Canadians drive over 300 billion kilometres in their cars, trucks and SUVs, with the average Canadian household driving around 26,460 kilometres per year. Much of this driving is commuting, with the average Canadian spending close to an hour getting to and from work by car each day. An average commuter could save \$215/year by commuting to work one day a week on the bus, and taking public transit three days a week could save an average of \$646/year.¹⁰⁶

Realizing these cost savings for families — and the associated air pollution and greenhouse gas benefits that public transit provides — requires dedicated funding for public transit to be a strong component of the Long-Term Infrastructure Plan. To ensure this is the case, the Government should recognize transit through a carve-out dedicated specifically to transit investment, to help ensure the sustainable growth of our communities over the longer term.

Increasing Investment in Public Transit

In 2012, the Canadian Urban Transit Association (CUTA) identified that Canadian transit systems require a \$53.5 billion investment over the next five years for infrastructure expansion, replacement and renewal.¹⁰⁷ The federal share of this has been estimated at \$2 billion to \$2.7 billion annually.¹⁰⁸ CUTA identifies a federal transit funding shortfall of about \$1.3 billion per year. The Long-Term Infrastructure Plan is the right vehicle to fill that cost gap with \$1.3 billion in new annual investment for five years, beginning in 2014. This would build on the approximately \$600 million

¹⁰⁴ A Federation of Canadian Municipalities (FCM) – McGill University survey in 2007 estimated Canada's municipal infrastructure deficit related to meeting then-current standards for wastewater and stormwater systems to be approximately \$19.9 billion. (FCM, November 2007, *Danger Ahead: The Coming Collapse of Canada's Municipal Infrastructure*, ISBN 978-1-897150-20-7, https://www.fcm.ca/Documents/reports/Danger_Ahead_The_coming_collapse_of_Canadas_municipal_infrastructure_EN.pdf, p. 16. The municipal water supply deficit was also estimated at \$11.1 billion, out of a total municipal infrastructure deficit of \$123 billion.) In addition, the Canadian Council of Ministers of the Environment (CCME) estimated that it will cost \$10 billion to \$13 billion for a Canada-wide strategy to address the new sewage effluent standards. (CCME, February 1 2009, *Canada-wide Strategy for the Management of Municipal Wastewater Effluent*, http://www.ccme.ca/assets/pdf/cda_wide_strategy_mwwe_final_e.pdf, p. iii.)

These above costs total roughly \$40 billion. Dividing these costs equally between the federal, provincial/territorial, and municipal governments suggests their respective shares of that total \$40 billion cost is \$13.3 billion each. If the federal government allocated another \$300 million to assist financially-limited municipalities, that \$13.6 billion total would be equivalent to \$1.36 billion/year for 10 years. However, if the Gas Tax Fund continues to provide, on average, 28% of its funds to water and wastewater infrastructure (as it did between 2005 and 2010, per Infrastructure Canada, June 2012, *Building a Better Canada Together*, http://www.infrastructure.gc.ca/alt-format/pdf/FCM_2012-eng.pdf), that would provide \$560 million annually, leaving a further need of \$800 million per year for water and wastewater infrastructure.

¹⁰⁵ Conference Board of Canada, 2008, *Canada's Pathways Toward Global Innovation Success: Report of the Leaders' Panel on Innovation-Based Commerce*, <http://www.conferenceboard.ca/documents.aspx?did=2762>

¹⁰⁶ Pembina Institute, October 2012, *Behind the Wheel*, <http://www.pembina.org/pub/2379>

¹⁰⁷ Canadian Urban Transit Association, 2012, *Transit Infrastructure Needs for the Period 2012 – 2016*. http://www.cutaactu.ca/en/publicaffairs/resources/CUTA_IS_Report2012_E.pdf

¹⁰⁸ The Toronto Board of Trade identified the federal government share of this as \$2.7 billion annually. Toronto Board of Trade, 2011, 2011 Pre-budget Submission. CUTA estimates \$2 billion in their most recent report: http://cutaactu.ca/en/publicaffairs/resources/CUTA_IS_Report2012_E.pdf

per year that communities already dedicate to transit through the Gas Tax Fund, meaning that the total federal investment in transit would total about \$2 billion a year from 2014 onwards.¹⁰⁹

Recommended Minimum: \$1.3 billion per year

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¹⁰⁹ Through the Gas Tax Fund (GTF) and other programs in the Building Canada Plan, the federal government currently invests close to \$1 billion in public transit every year. When the BCP expires in 2014, only the GTF will remain. Since its inception in 2005, 34% of GTF allocations went to public transit (on a yearly basis that would represent approximately \$660 million). Assuming the ratio stays the same in future years, the new LTIP should dedicate about \$1.3 billion annually to public transit (on top of GTF allocations). Canadian Urban Transit Association, 2012, Transit Infrastructure Needs for the Period 2012 – 2016.

CANADA'S FRESH WATER: INVESTING FOR HEALTHY COMMUNITIES, ECONOMIES, AND ENVIRONMENTS

Recommendation Summary

Canada's freshwater ecosystems are a tremendous asset deserving of world class protection. While some welcome investments have been made in Canada's freshwater systems, much remains to be done to assure a legacy of protection of pristine waters and improvements and clean-ups in those which have been degraded. Continuing pollution in the Great Lakes and Lake Winnipeg threaten their aquatic ecosystems, human health and economic development. Fisheries and their supporting habitats are increasingly threatened. And severe weather events are resulting in dire consequences to people and ecosystems with more frequency. Strategic investments in Canada's aquatic ecosystems are needed to improve the quality and reliability of the fresh water that flows through Canada's communities, economy and environment.

To help secure the health of Canada's diverse aquatic environments, the **priority areas for investment** are the **regional ecosystems of the:**

1. **Great Lakes** – Supporting the new Great Lakes Water Quality Protocol, Areas of Concern, environmental monitoring, invasive species and a climate change impact strategy, by continued investment in the Canada-Ontario Agreement (Great Lakes); and
2. **Mackenzie River basin** – Supporting work with the Government of NWT to enhance scientific research and monitoring, and the analysis and reporting of information on the health of the waters of the Mackenzie Basin.

Investment Required:

Total: **\$30 million per year for five years**

Great Lakes¹¹⁰: \$25 million per year for five years

Mackenzie River basin: \$5 million per year for five years

See also *Funding Canada's Infrastructure Future*, for more fresh water recommendations.

Benefits for Canadians

- Healthy aquatic ecosystems will support tourism, fisheries and other green business opportunities, and sustain the cultural importance of water to Canada and Canadians from coast to coast to coast.

demands a strategic approach that focuses spending on priority areas for protection and restoration. Healthy environments support healthy economies. Where regional ecosystems have deteriorated, restoration can bring high economic return. Estimates suggest that restoring the Great Lakes ecosystem will lead to direct economic benefits of between \$6.5 billion to \$11.8 billion from tourism, fishing, and recreation alone.¹¹¹

Background and Rationale

Healthy Environments – Regional Ecosystems:

Securing the health of Canada's diverse aquatic environments

¹¹⁰ Canada and Quebec renewed the St. Lawrence Action Plan in November 2011 with an accompanying joint investment of \$70 million over the next five years. <http://www.qc.dfo-mpo.gc.ca/infoceans/201202/article3-eng.asp>

¹¹¹ Austin, J; Anderson, S; Courant, P; Litan, R, 2007, Healthy Waters, Strong Economy: The Benefits of Restoring the Great Lakes Ecosystem, http://www.brookings.edu/metro/pubs/20070904_gleiecosystem.pdf

The Government's announcement, in August 2012, of \$17 million (over 5 years) for Phase II of the Lake Winnipeg Basin Initiative¹¹² was welcome and promising. The measure of these funds' impact will be the scale of noticeable improvement in the health of Lake Winnipeg.

The federal government also recently announced a \$16 million initiative¹¹³ targeted at nutrients in Lake Erie in the wake of the signing of the Canada – U.S. Great Lakes Water Quality Protocol, and a \$17.5 million initiative over five years responding to the threat of Asian Carp invasion of the Great Lakes.¹¹⁴

Taking further action now, building on these and previous announcements, to protect ecosystems that remain in good condition could avoid larger future restoration costs.

Regional priorities focus on Canada's two largest freshwater ecosystems:

1. Investing **\$25 million per year for five years** in the **Great Lakes** (for the newly signed Great Lakes Water Quality Protocol (GLWQP of 2012; amending earlier versions of the Great Lakes Water Quality Agreement),¹¹⁵ Areas of Concern (AOCs), environmental monitoring, invasive species and a climate change impact strategy) by continuing investment in the Canada-Ontario Agreement (Great Lakes).

Commitments under the new GLWQP of 2012 include: establishing Lake Ecosystem Objectives for each Great Lake, and Substance Objectives to achieve the Lake Ecosystem Objectives; continuing much-needed work on cleaning up long outstanding Areas of Concern; pursuing Lakewide Management approaches that include identification and responses to a variety of stresses; reducing releases of chemicals of mutual concern including through measures to achieve virtual elimination and zero discharge in certain cases and use of safer and less harmful chemicals; responding to climate change; reducing nutrients; reducing discharges from vessels; responding to aquatic invasive species; contributing to habitat restoration and protection; pursuing additional groundwater science and examine the impact of groundwater

on the Great Lakes; and enhancing science in relation to the Great Lakes objectives. These efforts must work in conjunction with the efforts under the St. Lawrence Action Plan.

2. Investing **\$5 million per year for five years** to preserve the waters of the **Mackenzie River Basin**

Draining 20% of Canada's land mass and gathering waters from British Columbia, Alberta, Saskatchewan, Yukon, and NWT, the Mackenzie River Basin intersects many political boundaries. One of the world's few large wild rivers, the free-flowing Mackenzie is a remarkable ecosystem of continental and global importance. Many of the threats to the Mackenzie occur on its upstream tributaries – the Peace and the Athabasca. Negotiations are underway to develop new agreements between provinces and territories under the Mackenzie River Basin Transboundary Master Agreement. The **Northwest Territories (NWT) Water Stewardship Strategy**, which was jointly developed by the Government of NWT and Aboriginal Affairs and Northern Development Canada (AANDC; then Indian and Northern Affairs Canada), presents another opportunity to advance water sustainability in the Mackenzie Basin. Building on the federal government's efforts to improve monitoring of water quality, quantity and ecosystem health in the oil sands regions, funding should be allocated, via AANDC, to work together with the Government of NWT to enhance scientific research and monitoring and the analysis and reporting of information on the health of the waters of the Mackenzie Basin.

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¹¹² Prime Minister of Canada, 2 August 2012, Launch of Phase II of the Lake Winnipeg Basin Initiative, <http://pm.gc.ca/eng/media.asp?id=4930>

¹¹³ <http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=6578428B-0C02-4CE8-8443-5D84A6FD53B2>

¹¹⁴ <http://www.dfo-mpo.gc.ca/media/npress-communique/2012/hq-ac15-eng.htm>

¹¹⁵ For the full text, see http://www.ec.gc.ca/Publications/9DD80B8C-7E7A-4131-8055-D47B0B3E004F/EN-Canada-USA-GLWQA--FINAL_web.pdf

SUSTAINABLE TRANSPORTATION: ELECTRIC VEHICLES

Recommendation Summary

Invest in electric vehicle infrastructure and electric vehicle purchase incentives, with a focus on pilot markets. \$50 million in 2013.

Investment Required: **\$50 million in 2013**

See also *Funding Canada's Infrastructure Future*, earlier in this document, for further transportation-related recommendations.

Background and Rationale

Transportation is responsible for a quarter of Canada's greenhouse gas emissions and personal vehicle road transportation contributes about 2/3 of these emissions. Electric vehicles (EVs) hold strong potential to revolutionize personal transportation, leading to significant GHG emission reductions, and the federal government can play a stronger role in encouraging their adoption by investing in technology, infrastructure and related pilot projects.

While more efficient vehicles can help reduce greenhouse gas emissions, annual increases in the number of vehicles on Canada's roads will continue to exacerbate greenhouse gas emissions, regional pollution, and traffic congestion, particularly in urban regions. In the Greater Toronto Area (GTA), the Toronto Board of Trade found that congestion leads to \$6 billion in lost productivity annually,¹¹⁶ while in the greater Montreal area these losses were estimated at \$1.4 billion.¹¹⁷ Providing commuters with viable alternatives, including transit and active transportation, can help relieve these issues and lead to economic growth.

Electric Vehicles

Investing in Electric Vehicle Technology and Infrastructure:

The government has made some initial first steps to encourage the production of electric vehicles through investment into technology research, including \$11 million to McMaster University¹¹⁸ and a repayable \$71 million to Toyota for production of the electric RAV4.¹¹⁹ However, to encourage a more significant transition to electric vehicles, the Green Budget Coalition recommends that the government establish a new fund to support broader investment in electric vehicle infrastructure and incentives with a focus on pilot markets and travel corridors.

Specifically, this fund should target communities with favourable conditions for electric vehicles, including integration with renewable energy supply, grid readiness and population density. In communities that are suitable for pilot projects, the federal government should work with provincial and municipal governments to develop charging infrastructure and to reduce initial costs of electric vehicles (via purchase incentives). These actions will help reduce the primary barriers to the adoption of EVs – a lack of charging infrastructure and high upfront costs in comparison to traditional gasoline vehicles.

¹¹⁶ Toronto Board of Trade, 2011, *Reaching Top Speed: Infrastructure: Unleashing Ontario's Ability To Grow*, http://bot.com/Content/NavigationMenu/Policy/VoteOntario2011/Reaching_Top_Speed.pdf

¹¹⁷ Board of Trade of Metropolitan Montreal, 2010, *Public Transit: At the Heart of Montreal's Economic Development*, http://www.cmm.qc.ca/documents/etudes/2010_2011/10_11_26_ccmm_etude-transport_en.pdf

¹¹⁸ Federal Economic Development Agency for Southern Ontario, 2011, *Government of Canada Invests in McMaster University's Automotive Resource Centre*, <http://www.feddevontario.gc.ca/eic/site/723.nsf/eng/00602.html>

¹¹⁹ Industry Canada, 2011, *Minister of Industry Highlights Federal Investment in Toyota to Support Jobs in Canada*, <http://news.gc.ca/web/article-eng.do?nid=614649>

In addition to promoting pilot communities, the fund should support quick-charging infrastructure along major travel corridors. An electric-friendly highway network of DC charging infrastructure will overcome the range limitations currently associated with the vehicles.

Electric Mobility Canada (EMC) has proposed a similar program, which calls for \$56.5 million:

- \$2 million in 2011 for codes and standards work by Canadian Standards Association,
- \$2.5 million in 2011 and \$7.5 million in 2012 to help develop home and business charging stations,
- \$0.5 million in 2011 and \$2 million in 2012 to develop public charging stations, and
- \$10.5 million in 2011 and \$31.5 million in 2012 for electric vehicles incentives (\$7,000/vehicle).

The Green Budget Coalition specifically recommends a total budget of \$50 million in 2013 to commence pilot projects, including key actions outlined by EMC: home and business charging stations, public charging facilities along major travel corridors, incentives, and education. The federal government should work with provincial governments and pilot municipalities to determine the most effective use of these funds.

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Lead Departments and Costs (and Revenues) Associated with the GBC's Recommendations for Budget 2013
(in millions of dollars; negative figures represent savings or revenues)

Recommendation <i>Sub-Recommendation</i>	Likely Lead Department(s)	Notes on Costs/Revenues	2013-14	2014-15	2015-16	2016-17	2017-18	ongoing
FEATURE RECOMMENDATIONS								
Subsidy Reform in the Extractive Industries								
Canadian Exploration Expense	Finance, NRCan	Savings likely above these levels.	-240	-240	-240	-240	-240	-240
ACCA for mining sector	Finance, NRCan		-5	-5	-5	-5	-5	-5
Mineral Exploration Tax Credit	Finance, NRCan		-130	30				
National Conservation Plan								
<i>Oceans</i>								
Marine Protected Areas	DFO, EC, PC		35	35	35	35	35	35
Marine Planning	DFO		20	20	20	20	20	20
State of ocean reporting	DFO		10	10	10	10	10	10
<i>National Parks</i>								
Establishment and ongoing management	PC		20	20	20	20	20	20
	PC		50					
Protecting National Parks' ecological integrity	PC		10	20	30	40	50	50
Conserving migratory birds	EC		30	30	30	30	30	30
Environmental Law & Science Capacity								
<i>Environmental Laws</i>								
Enforcement information/database	EC		2	2	2			
Program Support to Provinces and Territories	EC		5	5	5	5	5	
Process for reviewing proposed changes		Costs unknown, likely small, would depend on extent of legislative proposals.						
Science - Preserve current capacity	AANDC, DFO, EC, NRCan, PC		0	0	0	0	0	0
Green Infrastructure in First Nations Communities								
Water & wastewater systems	AANDC		600	600	600	600	600	
Residential energy conservation	AANDC		24	24	24	24	24	
Non-residential energy efficiency	AANDC		20	20	20	20	20	
TOTALS (Feature Recommendations)			451	571	551	559	569	-80
COMPLEMENTARY RECOMMENDATIONS								
<i>Related to feature recommendations</i>								
Ecogifts - Extending to Inventory Lands	EC, Finance	Costs uncertain, likely less than \$1 million/year.						
<i>Green Infrastructure in First Nations communities</i>								
Healthy housing - on-reserve	AANDC		750	750	750	750	750	
Healthy housing - off-reserve	AANDC		100	100	100	100	100	
Environmental health (institute/research)	HC		5	5	5	5	5	
<i>Energy Sustainability and Climate Action</i>								
Sustainable Energy								
Energy storage	NRCan		100	100	100	100	100	
SDTC	NRCan		100	100	100	100	100	
Green energy bonds	Finance, NRCan		100	100	100	100	100	
National Green Homes Strategy	EC, NRCan		250	250	250	250	250	
Arctic & remote communities' energy supply	AANDC, NRCan		12	12	12	12	12	
Carbon Pricing								
	EC, Finance	Revenues would depend on carbon price level.	-18,000 to -50,000	-18,000 to -50,000	-18,000 to -50,000	-18,000 to -50,000	-18,000 to -50,000	-18,000 to -50,000
Utilising carbon pricing revenues	EC, Finance	Spending would not exceed above revenues.	0 to 50,000	0 to 50,000	0 to 50,000	0 to 50,000	0 to 50,000	0 to 50,000
Hidden Liabilities in the Arctic Offshore & Nuclear Power								
Arctic offshore	NRCan	Could reduce taxpayer liabilities by billions of dollars.	n/a	n/a	n/a	n/a	n/a	n/a
Nuclear Power	NRCan		n/a	n/a	n/a	n/a	n/a	n/a
Oil & Gas Savings Fund	Finance		-	-	-	-	-	-
<i>Healthy Communities</i>								
Canada's Infrastructure Future								
<i>Long-Term Infrastructure Plan</i>								
Water & wastewater management	InfC			800	800	800	800	
Public Transit	InfC			1300	1300	1300	1300	
Water & wastewater management (2013-14)	InfC		800					
Sustainable Transportation: Electric Vehicles	NRCan, TC		50					
Canada's Freshwater								
Great Lakes	EC		25	25	25	25	25	
Mackenzie River basin	AANDC		5	5	5	5	5	
TOTALS (all recommendations *except* Carbon Pricing and Hidden Liabilities)			2748	4118	4098	4106	4116	-80

Departmental Acronyms:

AANDC: Aboriginal Affairs and Northern Development Canada
DFO: Fisheries and Oceans Canada
EC: Environment Canada
Finance: Finance Canada
HC: Health Canada

InfC: Infrastructure Canada
NRCan: Natural Resources Canada
PC: Parks Canada
TC: Transport Canada



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