

RECOMMENDATIONS FOR BUDGET 2015



Featuring:
Energy Innovation and Climate Change Leadership
Achieving Canada's Conservation Commitments
Healthy Communities for All Canadians





Who We Are

The Green Budget Coalition (GBC), founded in 1999, brings together fourteen 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 organizations 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; and
- 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.

The GBC's Co-Chairs are Theresa McClenaghan, Executive Director of the Canadian Environmental Law Association, and Jim Brennan, Director of Government Affairs for Ducks Unlimited Canada.

The Green Budget Coalition sincerely thanks the Echo, McLean, George Cedric Metcalf and Salamander Foundations for their generous financial support. The GBC's efforts are largely funded by its members and these foundations.





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This document will also be available at www.greenbudget.ca, and in French at www.budgetvert.ca.

For department acronyms, see page 75.



Executive Summary

Canada's environment is central to Canadians' prosperity.

Smart measures to advance environmental sustainability can simultaneously improve Canadians' health and wellbeing, stimulate innovation and economic opportunities, and preserve our natural heritage for our benefit, enjoyment and as a legacy for future generations.

The **Green Budget Coalition (GBC)**, active since 1999, brings together fourteen 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.

The Green Budget Coalition has welcomed the Government of Canada's progress on the GBC's recommendations over recent years, including the Prime Minister's May 2014 announcement of the National Conservation Plan, reductions in tax preferences for the extractive industries in four of the last eight budgets, and new funding for fresh waters and green infrastructure, particularly for First Nations communities.

However, many more federal actions are needed. Waiting to act will increase both the urgency and the costs of action. Budget 2015 is a prime opportunity to take strategic action.

For Budget 2015, the Green Budget Coalition is recommending the Government of Canada capitalize on prime economic, environmental and human health opportunities by advancing on the following three strategic agendas:

- 1) Energy Innovation and Climate Change Leadership** – an integrated agenda to capitalize on the blossoming global clean technology industry and take leadership on climate change;
- 2) Achieving Canada's Conservation Commitments** – making progress on protecting our life support system, starting by meeting our international Aichi biodiversity targets; and
- 3) Ensuring Healthy Communities for all Canadians** – featuring a new *environmental health equity* agenda to ensure all Canadians – including vulnerable and disadvantaged populations – can enjoy the same level of protection from preventable environmental health hazards.

Adopting these three agendas – each of which includes key associated recommendations, as outlined in the following three pages – together would create significant environmental, economic, and human health benefits for years to come.

1) Energy Innovation and Climate Change Leadership

The clean technology industry is one of the fastest-growing sectors in the world, estimated at \$1 trillion and already employing more Canadians than the oil sands. Accelerated progress in clean energy innovation and commercialization in Canada could capture more of this market and lead to significant benefits in Canadian jobs, economic activity, tax revenues and prosperity in the coming decades.

Climate change is a critical challenge, threatening the health and safety of present and future generations of Canadians and people worldwide, with the poorest being most vulnerable. It also threatens much of our cherished nature and biodiversity. There is a need for ambitious action to limit warming to 2°C, a level that Canada and a majority of countries have adopted as a limit and beyond which the impacts of climate disruption are more likely to be severe and irreversible. Fortunately, many credible analyses have suggested that the cost of preventive measures is much smaller than the likely costs of inaction.

To take advantage of these economic opportunities and demonstrate global leadership on climate change, the GBC urges the federal government to commit to a strong integrated energy innovation and climate change agenda, building on actions it has already taken, and including the following actions:

Top Priority:

1. Continue the government's progress on Canada's G-20 commitment to phase-out inefficient fossil fuel subsidies, starting by not providing any new subsidies to oil, gas or mining, including liquefied natural gas (LNG).
2. Announce and begin implementation of a well-designed market-based price on greenhouse gas (GHG) emissions that: provides a sufficient incentive for innovation and GHG emission reductions, compensates low-income Canadians for potential increased costs, and creates a source of revenue to finance the other measures listed here. The World Bank, International Monetary Fund, Canadian Council of Chief Executives, Canadian Chamber of Commerce, seventy-three countries and over one thousand companies have all publicly expressed

support for putting a price on carbon, the most efficient means for reducing GHG emissions.

3. Adopt the following two strategic measures, as part of a broader suite of actions, to help create a more efficient Canadian energy system, and facilitate increased use of Canada's clean energy sources:
 - a. Invest \$12 million in 120 fast-charging stations for electric vehicles around key major urban centres.
 - b. Provide accelerated capital cost allowance for expenditures on all types of tangible stand-alone power storage assets.
4. Play a leadership role in the United Nations Framework Convention on Climate Change (UNFCCC) negotiations to secure global, realizable commitments for addressing climate change, including committing annual funding of at least \$400 million in 2015 and 2016 for climate change adaptation and mitigation in developing countries through such initiatives as the Green Climate Fund and Climate and Clean Air Coalition.

Important Priority:

5. Protect Canadians and our unique environment from increasingly volatile weather events by:
 - a. Renewing and expanding adaptation funding under the Clean Air Agenda;
 - b. Integrating adaptation considerations into all infrastructure project planning and assessment under the Building Canada Plan.
6. Facilitate ongoing energy savings for Canadians, and local job creation across Canada by partnering with provinces, territories and First Nations to create a national home retrofit program to upgrade the majority of homes, utilizing grants and loan-based financing, and starting with low-income Canadians.

Complementary to the above, the GBC supports renewing funding for the full Clean Air Agenda (including its Clean Air Regulatory Agenda, clean energy, clean transportation, adaptation, and international components), the EcoENERGY Efficiency and Innovation Initiative, the Clean Energy Fund, and the Major Projects Management Office Initiative, all of whose funding is scheduled to sunset in March 2015 or 2016.

2) Achieving Canada's Nature Conservation Commitments:

Protecting our life support system

In May 2014, the federal government announced the initial phase of a National Conservation Plan, providing welcome support for important conservation programs, including significant investments in private land stewardship, through the Natural Areas Conservation Program, in wetlands, as well as support for marine protected areas.

Building on these initial steps, the GBC recommends that the federal government focus next on achieving its internationally agreed-to 2020 conservation targets, with a particular focus on protecting public lands and waters and investing in science to ensure Canada's actions to meet our protected areas targets are effective and efficient.

While the federal government re-affirmed its commitment to Canada's international biodiversity targets (known as the Aichi Targets), including protecting 17% of our land and inland waters and 10% of our marine and coastal areas by 2020, in its announcement of a National Conservation Plan, there is not yet any plan in place to achieve them. A roadmap to meeting the 2020 Aichi Biodiversity Targets is urgently needed and should be at the heart of Canada's National Conservation Plan.

Meeting Canada's agreed-to international conservation targets is a shared responsibility of all jurisdictions in Canada, but the federal government has a particularly important leadership role to play, in leading a coordinated effort to protect Canada's biodiversity, starting with a science-based plan to achieve the Aichi Targets; and by implementing conservation actions in areas of federal jurisdiction – including federal protected areas, migratory bird conservation, species at risk, ocean and fisheries management and representing Canada in international conservation agreements and fora.

Given that governments (federal, provincial, territorial and Aboriginal) manage about 90% of our land base and all of our ocean estate, we recommend a particular focus on protecting Canada's public land and water – a notable gap in the first phase of the federal government's conservation plan.

To strengthen the National Conservation Plan, the GBC recommends that the federal government make the following investments in Budget 2015:

1. Protecting Canada's public land and water:

\$100 million per year to deliver on the federal government's areas of responsibility in meeting Canada's international target of protecting at least 17% of our lands and freshwater and 10% of our oceans by 2020:

- **National Parks:** \$40 million per year ongoing to **advance the development of Canada's national parks system and ensure Parks Canada's science-based conservation programs are adequately resourced**, plus a one-time investment of \$50 million for land acquisition and other national park establishment costs.
- **Environment Canada protected areas:** \$40 million per year, ongoing, for Environment Canada to **create and manage new National Wildlife Areas and to properly monitor and manage the existing system of National Wildlife Areas and Migratory Bird Sanctuaries to protect wildlife habitat.**
- **Conservation Science Support:** \$20 million per year for five years to **provide science support** for regional conservation planning and actions with a particular focus on advancing interconnected networks of terrestrial and marine protected areas.

2. Species at Risk Act Implementation:

\$40 million per year, for five years, to **renew federal Species at Risk Act implementation funding** currently scheduled to "sunset" in March 2015.

As noted in the federal Environment Commissioner's fall 2013 report, there is still a significant backlog in completion of species recovery documents, as well as a gap in development of policy tools needed for stakeholders to understand and move forward with their own protection measures for species. This federal investment, a slight increase over Budget 2012's renewal of previous funding, is intended to overcome this backlog.

The GBC also encourages further federal funding for marine protected areas, fisheries management, migratory birds and wetlands to ensure actions in these areas achieve Canada's commitments under the Aichi Targets.

3) Ensuring Healthy Communities for all Canadians,

featuring:

A. Environmental Health Equity

All Canadians should have the right to a healthy environment, but there is increasing evidence that disadvantaged and vulnerable communities bear a disproportionate burden of preventable environmental health hazards, such as pollution, environmental degradation and the effects of climate change.

The GBC recommends that the **Government of Canada invest in an environmental health equity agenda, including initiatives to:**

- Better understand the burden of preventable environmental health hazards facing disadvantaged and vulnerable communities in Canada, as well as inequalities in access to environmental health benefits;
- Assess the extent to which it may be possible to intervene so that preventable environmental health hazards do not disproportionately affect disadvantaged or vulnerable communities, and to ensure equal access to environmental health benefits; and,
- Identify and implement mechanisms to ensure that all Canadians have the opportunity to enjoy the same level of protection from environmental health hazards and access to environmental health benefits.

The Green Budget Coalition recommends a new federal Office of Environmental Health Equity be established to support ongoing assessment and to champion the integration of environmental health equity across all relevant government departments and agencies, programs, policies and activities.

Recommended Investment: \$15 million per year, ongoing

Ensuring healthy environments for all Canadians will require many complementary federal actions. The best federal budgetary opportunities to improve Canadians' environmental health are outlined in the following GBC recommendations:

B. Home Radon Remediation – Amend *Income Tax Act* to provide a tax credit to homeowners incurring costs for remediating radon, the

second leading cause of lung cancer in Canada. Cost likely negligible.

C. Protecting Canada's Fresh Water

The GBC recommends that the Government of Canada build on the success of its Action Plan for Clean Water, through a broader **Canada Water Fund**, investing in the following: (*all funding figures annual, for five years*)

1. Long-term watershed health:
 - a. Alleviating land based run-off of pollutants and nutrients through national, partnership-based nutrient reduction stewardship strategy, with Environment Canada and agricultural industry: \$100 million annually, matched by government and non-government partners.
 - b. Continuing implementation of the Great Lakes Water Quality Protocol with emphasis on the remaining three Canadian Areas of Concern: \$25 million/year;
 - c. Aquatic invasive species:\$25 million/year;
2. Building World Class Science, Capacity and Partnership
 - a. Ensuring national monitoring framework that is accessible and comprehensible. Water quality and quantity monitoring framework: \$30 million/year;
 - b. Fisheries Protection Program (FPP): Monitoring and evaluation: \$10 million/year, and Scientific research: \$25 million/year

D. Implementing the Air Quality Management System (AQMS) – Sustain funding for the Clean Air Regulatory Agenda (CARA) to implement the AQMS, including completing development and implementation of the Multi-sector Air Pollutant Regulations and Canadian Ambient Air Quality Standards, and complementary research and monitoring initiatives. Early renewal at Budget 2011 level, of \$126 million/year, this time ongoing.

E. Chemicals Management Plan (CMP) – Sustain funding to complete assessment, and management of substances categorized and prioritized for action under the CMP by 2020, as required by the Canadian Environmental Protection Act, 1999. Early renewal, at \$100 million per year, for five years.

F. Green Infrastructure for First Nations –

Integrate green infrastructure thinking into the programs and policies needed for planning and updating First Nations communities. Invest in water and wastewater systems (\$400 million/year) and energy efficiency for residential (\$24 million/year) and commercial buildings (\$20 million/year).

This document also includes cross-cutting recommendations on the importance of strengthening science capacity, greening Canada's economy, subsidy reform and environmental pricing, and measuring ecological goods and services.

Adherence to the "polluter pays" principle² is central to fairness for Canadians and Canadian businesses, including to level the "fiscal playing field" for natural resources. The GBC was thus pleased that the Government of Canada incorporated the polluter pays principle into parts of Bill C-22, the *Energy Safety and Security Act*,³ and encourages the government to apply the polluter pays principle consistently across all relevant legislation and contexts. (See *Levelling the Fiscal Playing Field for Natural Resources: Subsidy Reform and Environmental Pricing and Liability Rules for the Arctic Offshore, Nuclear Power, and Rail Freight Transportation*, later in this document.)

Making science and science capacity a priority is fundamental to the Government of Canada's ability to advance Canadians' economic prosperity, health, and quality of life, by understanding the underlying building blocks of the ecosystems and natural resources on which they depend. Adequate science must remain the basis for informed decision-making in addition to effectively supporting the Government of Canada's statutory obligations. Recommendations on science are woven throughout this document.

The GBC's recommendations are chosen for their environmental importance and political

timeliness. They represent only a portion of the actions needed to achieve comprehensive environmental sustainability for Canadians.

In particular, Canada's economy plays a critical role in facilitating healthy lives and prosperity for Canadians, but also causes a large amount of pollution and other environmental degradation and resource depletion. As such, improving the environmental impact of Canada's economy,⁴ often termed "greening Canada's economy," is a fundamental and necessary aspect of achieving environmental sustainability in tandem with prosperity for Canadians. In broad terms, Canada's economy can be "greened" in two ways: by reducing the environmental intensity (or negative impacts per 'unit of production') or risks of economic activity, and by reducing the absolute level of economic activity, in both cases particularly for significantly environmentally damaging or risky activity such as major resource projects. (Many of this document's recommendations would help green Canada's economy. See, to start, *Greening Canada's Economy*).

The Green Budget Coalition believes strongly that adopting 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 today and far into the future. For this reason, we expect to continue refining and promoting these recommendations until they are adopted. Feedback and suggestions are welcome.

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² 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>

³ <http://www.parl.gc.ca/LegisInfo/BillDetails.aspx?Language=E&Mode=1&billId=6392558>

⁴ Improving environmental impacts can entail reducing environmentally-damaging activities or increasing environmentally-restorative activities.



Introduction

to Environmental Sustainability and the Green Budget Coalition's Annual Recommendations

Canada is home to a combination of biological and cultural diversity, a high standard of living and quality of life that is the envy of the world.

Environmental sustainability, at its core, is directed to preserving this diversity, wealth, and quality of life.

Environmental Sustainability

In essence, environmental sustainability in Canada has three primary overlapping objectives:

- 1) Ensuring that current and future generations of Canadians have access to the environmental goods and services, and key infrastructure - such as clean air, clean water, a stable climate, healthy soil and food supplies, energy sources, efficient transportation systems, and recreational opportunities – that are fundamental to **living a healthy and prosperous life**;
- 2) **Preserving marine and terrestrial biodiversity, wild species and spaces**, robust living systems in Canada, including terrestrial and marine protected areas, species at risk, wetlands, grasslands, and migratory birds; and
- 3) **Taking responsibility for global sustainability**, starting from a perspective of “do no harm” – ensuring that actions in Canada (including products we purchase and energy we consume) do not impede the ability of others beyond our borders to live healthy lives and achieve environmental sustainability in their own regions - while striving to assume a leadership role in pursuit of global environmental sustainability.

On an increasingly interconnected planet, environmental sustainability can only truly be achieved on a global scale.

Within these three areas are numerous inter-related aspects including (but not limited to) issues related to energy (efficiency, renewables, extraction, refining, transportation), climate, greenhouse gases, smog, biodiversity, air, fresh water, soil, agriculture, healthy and affordable food, forests, wetlands, grasslands, protected areas, private lands, urban and inter-city transportation systems, toxics, waste, pollution, environmental health equity, specific challenges in rural, remote, and First Nations communities, lifestyles, poverty, population, diverse ecosystems and climate regions, and culture.

It is worth noting that, in much of the world, environmental sustainability is typically considered (and addressed) under a broader objective of “sustainability” including economic and social priorities such as development and equity issues in line with the United Nations’ Millennium Development Goals. Reducing extreme poverty is a key to advancing environmental sustainability at a global level. Economic activity in wealthier countries results in significant beneficial and negative impacts on poorer global citizens, helping to create economic opportunities, but also leading to increased pollution and further depleting non-renewable resources.

Achieving Environmental Sustainability in Canada

Achieving environmental sustainability in Canada will require the use of numerous tools and strategies, including funding, environmental pricing, subsidy reform, regulations, leadership, coordination, domestic and global diplomacy, behavioural change, and redefining measures of societal success.

Similarly, to successfully advance environmental sustainability in Canada will require **actions by all levels of governments, businesses, civil society organizations and individuals across Canada**, often in concert. However, it should be emphasized that, of all these institutions and individuals in Canada, **the federal government has the greatest role to play**, in fulfilling its responsibilities and in playing an active leadership role, domestically and globally.

The Federal Budget

The federal budget itself is the most important annual federal policy document regarding the environment, and is a critical element in achieving environmental sustainability for Canadians. Federal funding is necessary for effective federal environmental protection programs, for provincial and municipal infrastructure, and federal tax policy plays a pivotal role in influencing economic activity and related resource and pollution impacts.

Green Budget Coalition's Annual Budget Recommendations Document

Understanding this importance, the Green Budget Coalition's members work together to provide the federal government with one set of well-researched, constructive, prioritized recommendations for each annual federal budget. In this document, we strive to:

- Highlight key priorities for the upcoming budget, balancing environmental importance with current political salience;
- Provide input on the breadth of environmental budget issues being considered within the current federal budget cycle, including funding scheduled to sunset in March 2015 and 2016; and
- Outline promising opportunities that merit further consideration.

The GBC has a longstanding commitment to ecological fiscal reform, to embedding environmental values - particularly the 'polluter pays' principle - into fiscal policy through environmental pricing and subsidy reform measures, in order to level the "fiscal playing field" for natural resources, and increase fairness for Canadians and businesses.

Recommendations for Budget 2015

With a federal budget surplus being forecast, and Canada facing key international commitments on climate change and biodiversity, the GBC chose this year to develop three comprehensive agendas, regarding:

- 1) Energy Innovation and Climate Change Leadership,
- 2) Achieving Canada's Nature Conservation Commitments, and
- 3) Ensuring Healthy Communities for all Canadians.

Each agenda incorporates or is associated with a series of related recommendations, as summarized in the *Executive Summary*.

Overall, the document incorporates a range of elements including relatively low-cost strategic measures that could likely be implemented relatively easily (such as tax measures for energy storage and radon remediation, and funding for conservation science and electric vehicle infrastructure), renewals and improvements of current funding for existing programs (including species at risk, clean air, and a number of energy programs), and broader recommendations that could create more far-reaching benefits (such as carbon pricing, environmental health equity, and a partnership-based nutrient reduction strategy for Canada's watersheds).

The GBC's recommendations are chosen for their environmental importance and political timeliness. They represent only a portion of the many actions needed to achieve comprehensive environmental sustainability for Canadians.

This document represents the culmination of many years of research and consultation with parliamentarians, senior government officials and other stakeholders, including a series of meetings earlier this fall with deputy ministers to discuss our preliminary recommendations. Feedback and suggestions are always welcome.



Energy and Climate

*featuring:
An Integrated Agenda
for Accelerating Energy
Innovation and
Climate Change
Leadership*

Accelerating Energy Innovation and Climate Change Leadership

The clean technology industry is one of the fastest-growing sectors in the world, estimated at over \$1 trillion⁵ and to be growing at a rate of 10-20% annually. As of 2012, there were already more clean energy jobs in Canada than in the oil sands.⁶ Accelerated progress on clean energy innovation and commercialization in Canada could capture more of this market and lead to significant benefits in Canadian jobs, economic activity, tax revenues and prosperity in the coming decades. Equally important, such progress could play a key role in accelerating progress, in Canada and globally, on mitigating⁷ dangerous climate change.

Climate change is a critical challenge, threatening the health and safety of present and future generations of Canadians and people worldwide, with the poorest being most vulnerable. It also threatens much of Canada's (and our planet's) cherished nature and biodiversity. There is a need for ambitious action to limit warming to 2°C, a level beyond which the impacts of climate disruption are more likely to be severe and irreversible, and the level that Canada and a majority of countries have adopted as a limit on global warming. As one of the world's wealthier nations, with one of the highest rates of per capita emissions, Canada has both a responsibility and an opportunity to play a leadership role, in limiting dangerous climate change and in helping Canadians and other global citizens adapt to its impacts.

Fortunately, many credible analyses have suggested that the cost of preventive measures is much smaller than the likely costs of inaction.⁸ For example, the Intergovernmental Panel on Climate Change (IPCC) recent report stated that the potential co-benefits and positive effects of emission reductions, such as improved human health and ecosystems, sufficiency of resources, and increased energy security, outweigh the potential costs.

The federal government has taken a number of notable steps to promote clean energy innovation and action to tackle climate change. These include funding for Sustainable Development Technology Canada, past funding for global climate finance and the ecoENERGY suite of programs, reducing subsidies to the extractive industries, and regulations on greenhouse gas emissions in the transportation and coal-fired electricity sectors. There are still many opportunities in clean energy and much action needed on climate change.

⁵ Analytica Advisors, 2013 Canadian Clean Technology Industry Report, http://analytica-advisors.com/sites/default/files/CCTIR_2013%20Prospectus.pdf

⁶ Clean Energy Canada, A Paycheque Reality Check: Clean Energy Jobs Stack Up Against Oil Sands Jobs, <http://cleanenergycanada.org/2014/10/03/paycheque-reality-check/>. Sources: Analytica Advisors' 2014 Canadian Clean Technology Industry Report, the Pembina Institute's briefing note *The Cross-Canada Impacts of Developing the Oil and Gas Industry of the Energy Sector*, and Petroleum Human Resources Council of Canada's report *The Decade Ahead: Labour Market Outlook to 2022 for Canada's Oil and Gas Industry*.

⁷ Mitigation (of climate change) refers to "[a] human intervention to reduce the sources or enhance the sinks of greenhouse gases (GHGs)", IPCC 2014, Final Draft, Annex I, Glossary, http://report.mitigation2014.org/drafts/final-draft-postplenary/ipcc_wg3_ar5_final-draft_postplenary_annex-i.pdf

⁸ See, for example: Risky Business: The Economic Risks of Climate Change in the United States, June 2014, <http://riskybusiness.org/report/overview/executive-summary>; TD Economics; and Natural Catastrophes: A Canadian Economic Perspective (April 2014), <http://www.td.com/document/PDF/economics/special/NaturalCatastrophes.pdf>

Environment Canada's most recent projections conclude that under current conditions, Canada's emissions will reach 734 million tonnes (Mt) by 2020 and miss our national GHG reduction target (of 612Mt) by 122 Mt.⁹

Opportunities for innovation and emissions reductions exist across the Canadian economy. As the government has already enacted GHG regulations in the transportation sector, and adopted measures for coal-fired electricity generation that take effect in 2015, the oil and gas sector is by far the largest "piece of the puzzle" that remains to be addressed. This sector accounted for 24.7 per cent of Canada's total emissions in 2012, and the oil sands in particular are Canada's fastest-growing source of GHG emissions. After oil and gas, the next largest emitting sectors in Canada are transportation, electricity and buildings, with those four sectors collectively representing about 72% of Canada's emissions in 2012.¹⁰

There are a number of federal budgetary measures that are key to driving progress on both energy innovation and climate change.

The Green Budget Coalition thus urges the federal government to commit to a strong, integrated energy innovation and climate change agenda including the following actions (all of which are detailed in the following pages). Implementing even a few of these recommendations will lead to significant economic and environmental benefits. Waiting to act would likely reduce the opportunities related to clean technology and will almost certainly increase the costs related to climate change.

Top Priority:

1. Continue the government's progress – in four of the last eight budgets – on Canada's G-20 commitment to phase-out inefficient fossil fuel subsidies, starting by not providing any new tax or other fiscal subsidies to oil, gas or mining, including liquefied natural gas (LNG) for export.
2. Announce and begin implementation of a market-based fee on greenhouse gas emissions (a "carbon price") that: becomes economy-wide, starts at a modest level, rises predictably, provides a sufficient incentive for innovation and GHG emission reductions, compensates low-income Canadians for increased costs, and creates a source of revenue to finance the other measures listed here. The World Bank¹¹, International Monetary Fund,¹² Canadian Council of Chief Executives,¹³ the Canadian Chamber of Commerce¹⁴ and more than one thousand businesses, governments, multilateral banks, and others¹⁵ have all publicly expressed support for putting a price on carbon as the most efficient means for reducing greenhouse gas emissions.

⁹ Environment Canada, Progress Toward Canada's Greenhouse Gas Emissions Reduction Target, <https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=CCED3397-1>

¹⁰ Environment Canada, National Inventory Report 1990-2012: Greenhouse Gas Sources and Sinks in Canada, <https://ec.gc.ca/ges-ghg/default.asp?lang=En&n=3808457C-1&offset=4&toc=show>

¹¹ World Bank, 3 June 2014, Statement, Putting a Price on Carbon, with excerpts: "The latest report from the United Nations Intergovernmental Panel on Climate Change makes clear the importance of putting a price on carbon to help limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels" and "Pricing carbon is inevitable if we are to produce a package of effective and cost-efficient policies to support scaled up mitigation", <http://www.worldbank.org/content/dam/Worldbank/document/Carbon-Pricing-Statement-060314.pdf>

¹² Christine Lagarde, Managing Director, International Monetary Fund, Center for Global Development, Promoting Responsible Energy Pricing, excerpts: "Pushing ahead with energy price reform might not be easy but it will certainly be worth it – many times over." <http://www.imf.org/external/np/speeches/2014/073114.htm>

¹³ See, for example, Canadian Council of Chief Executives, Framing an Energy Strategy for Canada, Submission to the Council of the Federation, where the CCCE supported "A clear, nationally consistent carbon price across the economy", <http://www.ceocouncil.ca/wp-content/uploads/2012/07/Framing-An-Energy-Strategy-for-Canada-FINAL-July-20122.pdf>

¹⁴ Canadian Chamber of Commerce, Environment – Our Position (web site page, accessed 14 September 2014), says "We favour a price on carbon", <http://www.chamber.ca/advocacy/issues/environment/>

¹⁵ <http://www.worldbank.org/en/news/feature/2014/09/22/governments-businesses-support-carbon-pricing>

3. Adopt the following two strategic measures, as part of a broader suite of actions, that would help create a more efficient Canadian energy system, by eliminating two barriers and thus facilitating greater use of Canada's clean energy sources:
 - a. Invest in infrastructure and incentives to transition transportation demand to lower carbon emitting alternatives (e.g., for electric vehicles).
 - b. Amend *Income Tax Act* Classes 43.1 and 43.2 to include expenditures on tangible stand-alone power storage assets, for all types of electricity storage.
4. Play a leadership role in the United Nations Framework Convention on Climate Change (UNFCCC) negotiations to secure global, realizable commitments for addressing climate change, including committing annual funding of at least \$400 million in 2015 and 2016 for climate change adaptation and mitigation in developing countries through such initiatives as the Green Climate Fund and Climate and Clean Air Coalition.

Important Priority:

5. Protect Canadians and our unique environment from increasingly volatile weather events by:
 - a. Renewing and expanding adaptation funding under the Clean Air Agenda;
 - b. Integrating adaptation considerations into all infrastructure project planning and assessment under the Building Canada Plan.
6. Facilitate ongoing energy savings for Canadians, and local job creation across Canada by funding home retrofits for low-income Canadians, and partnering with provinces, territories and First Nations to upgrade the majority of homes, utilizing loan-based financing.

Complementary to the above, the GBC supports renewing funding for the full Clean Air Agenda (including its Clean Air Regulatory Agenda, clean energy, clean transportation, adaptation, and international themes), the EcoENERGY Efficiency and Innovation Initiative, the Clean Energy Fund, and the Major Projects Management Office Initiative, all of which are scheduled to sunset in March 2015 or 2016.

Where any resource development is pursued, it is essential that it be done in a responsible fashion, including strong liability regimes for Arctic offshore development, nuclear power, and rail freight transportation, and that sufficient transparent consultation¹⁶ and environmental assessments be undertaken beforehand.

Climate change mitigation should be made central to any discussions on a national energy strategy, as the Canadian Premiers agreed in August 2014.¹⁷

Investing in clean energy and climate change action is key – for Canada and the world – to successfully make the transition to a greener, low-carbon economy.

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¹⁶ Proportional to the scale of the project and its related risks to the environment and Canadian residents.

¹⁷ On August 29, 2014, the Canadian Premiers released the following revised Vision for a Canadian Energy Strategy: "Canada is a global leader in providing a secure, sustainable and reliable supply of energy that is delivered with a high standard of environmental and social responsibility, consistent with efforts to reduce greenhouse gas emissions, and contributes to continued economic growth and prosperity for all Canadians." http://www.canadapremiers.ca/phocadownload/newsroom_2014/energy-final2.pdf



Subsidy Reform in the Extractive Industries: Supporting Responsible Resource Development

Recommendation Summary

The Green Budget Coalition strongly supports the Government of Canada's efforts in enhancing the neutrality of the tax system and rationalizing inefficient subsidies to mining and fossil fuel extraction, on which it has made progress in four of the last eight federal budgets. Important commitments to phase out tax preferences for the oil and gas and mining sectors were contained in Budgets 2007, 2011, 2012 and 2013, honouring Canada's G-20 commitment¹⁸ and likely resulting in increased federal revenue over \$400 million annually.

By continuing this progress, Canada can continue to advance responsible resource development while improving the neutrality of the federal tax system. The Green Budget Coalition now offers three recommendations to the Department of Finance Canada for doing so:¹⁹

- 1. Firstly, *do not* adopt any new tax subsidies for oil, gas or mining, including liquefied natural gas (LNG) for export.**
- 2. Enable Canadian Exploration Expenses (CEE) only for unsuccessful exploration.**
Annual savings: Over \$240 million per year
- 3. *Do not* renew the Mineral Exploration Tax Credit (METC) for flow-through shares (mining).**
Annual savings:
Budget 2014 projected \$45 million per renewal (over two fiscal years)

Total Savings: More than \$285 million per year, dependent on the level of resource exploration each year and the level of new tax subsidies being requested.

Benefits for Canadians

These measures would create both economic and environmental benefits. Firstly, increased economic activity attributable to tax expenditures can have a negative impact on environmental outcomes even when provincial and federal regulations are respected. This decreases Canada's natural capital, putting into jeopardy the net benefit of the tax expenditure.

Secondly, 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 supports Canada's long-term global competitiveness.

¹⁸ Canada's G-20 commitment is to phase-out inefficient fossil fuel subsidies over the medium-term.

¹⁹ The second and third of these recommended subsidy reforms was listed in a Memorandum from Finance Canada's Deputy Minister 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>

Background and Rationale

The Government of Canada has made important progress in enhancing the neutrality of the tax system and rationalizing inefficient fossil fuel subsidies, honouring Canada's G-20 commitment,²⁰ by phasing out tax preferences for the oil and gas and mining sectors in four of the last eight federal budgets. Important commitments were contained in Budgets 2007, 2011, 2012 and 2013, likely resulting in increased federal revenue over \$400 million annually.²¹

The Green Budget Coalition strongly supports these efforts by the Government of Canada, particularly to remove tax expenditures to the fossil fuel extraction industry, and therefore supports continued commitments to reduce fossil fuel subsidies.

Most recently, Budget 2013 moved to further align tax expenditures or deductions available for expenses in the mining sector with those available to the oil and gas sector, via two measures to reduce tax preferences in the mining sector.

With Budgets 2012 and 2013 bundling fossil fuel subsidy reform with responsible resource development, there was positive movement to better align tax policy with sound environmental policy. With reasonable economic growth in the 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, tax expenditures would rise 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 Green Budget Coalition.

Through further tax subsidy reforms, Canada can continue to advance responsible resource

development while improving the neutrality of the federal tax system. The Green Budget Coalition offers three priority recommendations for tax reform to the Department of Finance Canada, starting by not regressing on federal progress to date:²²

1. Do not adopt any new tax subsidies for oil, gas or mining, including liquefied natural gas (LNG) for export.

Adopting any new subsidies for LNG would run contrary to Canada's commitment to the G-20 to phase out inefficient fossil fuel subsidies and to Canada's efforts to reduce greenhouse gas emissions. Furthermore, in the context of the global *pathways to deep carbonization report* which indicated Canada needs to increase the portion of our electricity generated by wind and solar power from 2 per cent to 27 per cent to be "consistent with the objective of limiting the rise in global temperatures below 2°C",²³ any federal resources invested in increasing energy production need to be invested in clean, renewable sources. The best means to make LNG competitive with oil and gas is to further reduce subsidies to the oil and gas sector, not to increase fossil fuel subsidies.

2. 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 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, exploratory and dry wells are a fraction of total developed wells,^{24,25} indicating that current exploration expenses rates could be better

²⁰ Canada's G-20 commitment was to phase-out inefficient fossil fuel subsidies over the medium-term.

²¹ 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>

²² The second and third of these recommended subsidy reforms was listed in a Memorandum from Finance Canada's Deputy Minister to the Minister of Finance, 18 March 2010, Subject: G-20 Commitment – Fossil Fuel Subsidies, <http://pubs.pembina.org/reports/departement-of-finance-subsidies-memo.pdf>

²³ Sustainable Development Solutions Network (SDSN) and Institute for Sustainable Development and International Relations (IDDRI), September 2014, pathways to deep decarbonisation, Canada chapter, www.deepdecarbonization.org

²⁴ In 2007, exploratory wells were 12% of total well completions. Statistics Canada, Oil and gas extraction, Catalogue no. 26-213-X, Ottawa: Government of Canada, 2009. Table 2: Drilling Completions. <http://www.statcan.gc.ca/pub/26-213-x/2007000/t007-eng.htm>

²⁵ Between 2006 and 2013, dry wells that did not produce averaged 5% of total oil and gas wells completed, and only 2% between 2011 and 2013. The Canadian Association of Oilwell Drilling Contractors. <http://www.caodc.ca/sites/default/files/statistics/Well%20Counts-%20Annual%202001%20to%202013.pdf>

aligned with the wells that are not brought into development.

Annual savings: Over \$240 million per year²⁶

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,²⁷ 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.²⁸

The Mineral Exploration Tax Credit (METC) was introduced as a temporary measure in 2000 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.

It is uncertain whether the METC has had any significant impact on mineral exploration expenditures, in increasing metal reserves, in the creation of sustained economic activity, or in boosting exploration investment during lows in the commodity cycle. The 2009 update of *Taxation Issues for the Mining Industry*²⁹ 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%.

Annual savings:

Budget 2014 projected \$45 million per renewal (over two fiscal years)³⁰

The identification and removal of subsidies to the extractive sector is an important and necessary component of Canada's transition to sustainable economic growth and to maintaining our global competitiveness. During this time of fiscal restraint, subsidies to the extractive sector represent an added strain on public finances and an inefficient use of taxpayer dollars.

Many of these tax preferences and accelerated deductions recommended for reform date back to the 1970s and have since outlived their original objectives.³¹ Phasing out these tax preferences would support Economic Action Plan 2013 by improving the integrity of the tax system.

Alternative and Complementary Measures

The Commissioner of Environment and Sustainable Development in February 2013 indicated that, "Although the federal government provides a significant amount of financial support to the fossil fuel sector through tax expenditures, data capture and availability of data remain problematic."³² This meant the Department of Finance was unable to estimate tax expenditures support to the sector. The Commissioner also noted that past studies by Finance Canada did include estimates of accelerated deductions. Given that methods exist to collect the necessary data and publish the size of the tax expenditure, the GBC recommends that Finance Canada begin to collect data and routinely publish accelerated tax expenditure estimates for the mining and oil and gas sectors.

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²⁶ 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).

²⁷ "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).
<http://www.budget.gc.ca/2012/plan/pdf/Plan2012-eng.pdf>

²⁸ Budget 2012, Annex 4. <http://www.budget.gc.ca/2012/plan/pdf/Plan2012-eng.pdf>

²⁹ Natural Resources Canada, Intergovernmental Working Group on the Mineral Industry, 2009, *Taxation Issues for the Mining Industry: 2009 Update*, <http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/mineralsmetals/pdf/mms-smm/busi-indu/met-qfi/2009/met-qfi-eng.pdf>

³⁰ Budget 2014, Table A2.1, <http://www.budget.gc.ca/2014/docs/plan/anx2-1-eng.html>

³¹ Sawyer, Dave and Seton Stiebert, 2010, http://www.iisd.org/gsi/sites/default/files/ffs_awc_3canprovinces.pdf

³² Commissioner of Environment and Sustainable Development (February 3, 2012). 2012 Fall Report of the Commissioner of the Environment and Sustainable Development, Chapter 4—A Study of Federal Support to the Fossil Fuel Sector. Ottawa, Canada.
http://www.oag.bvg.gc.ca/internet/docs/parl_cesd_201212_04_e.pdf

Carbon Pricing: Using a Market-Based-Instrument to Demonstrate Global Leadership and Accelerate Progress Towards a Low-Carbon Economy

Recommendation Summary

To accelerate Canada's transition towards a low-carbon economy, demonstrate global leadership on climate change, and provide a flexible, efficient and fair mechanism to incent reductions in greenhouse gas (GHG) emissions by Canadian industry and across Canada's economy, the Green Budget Coalition encourages the federal government to announce and initiate implementation of a well-designed, transparent, predictably-rising, and environmentally rigorous price on GHG emissions (or "carbon price"). Such a price could readily complement the government's existing sector-by-sector regulatory approach and potentially start in the oil and gas sector, before being expanded economy-wide, providing an influential fiscal incentive for innovation plus notable opportunities from the use of the revenues.

The World Bank, International Monetary Fund, the Canadian Council of Chief Executives, the Canadian Chamber of Commerce, and more than one thousand businesses, governments, multilateral banks, and others have all publicly expressed support for carbon pricing, the most efficient means for reducing greenhouse gas emissions. The GBC itself has strongly supported such market-based-instruments since the GBC's inception in 1999.

Revenue Implications

The revenue implications of a carbon price 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.³³ Such systems already in place in British Columbia, Alberta and Quebec have collected \$1.2 billion,³⁴ \$74 million³⁵ and \$200 million³⁶ in annual revenues for their respective governments.

The scale of such revenues means that the question of how that money is utilized becomes a critical factor. See below section on Co-benefits of Carbon Pricing.

Background and Rationale

A price on greenhouse (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.

Prominent support for such a 'carbon price' has come from a wide variety of sources, including the Canadian Council of Chief Executives,³⁷ the

³³ Sustainable Prosperity Policy Brief, *Carbon Pricing, Climate Change, and Fiscal Sustainability in Canada*, December 2010. <http://www.sustainableprosperity.ca/dl290&display>

³⁴ <http://theyee.ca/News/2012/06/21/Oil-Sands-Carbon-Price/>

³⁵ Ibid.

³⁶ <http://www.sustainableprosperity.ca/dl290&display>

³⁷ See, for example, Canadian Council of Chief Executives, *Framing an Energy Strategy for Canada*, Submission to the Council of the Federation, where the CCCE supported "A clear, nationally consistent carbon price across the economy", <http://www.ceocouncil.ca/wp-content/uploads/2012/07/Framing-An-Energy-Strategy-for-Canada-FINAL-July-20122.pdf>

Canadian Chamber of Commerce,³⁸ the World Bank,³⁹ International Monetary Fund, World Business Council for Sustainable Development,⁴⁰ and over one thousand businesses, governments, multilateral banks, and others.⁴¹ A survey by Sustainable Prosperity in 2011 found that, “the majority of energy and carbon intensive industries in Canada overwhelmingly supports a price on carbon and has done so since 2006-2007.”⁴²

An increasing number of jurisdictions are implementing such ‘carbon prices’. In Canada, both Quebec and BC have carbon taxes. Cap-and-trade systems have been in place in the European Union since 2005, the Northeast U.S. since 2009, and in California and Quebec together since January 2014.

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, and making other GHG reduction policies more effective. 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 prices 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.⁴³

Co-benefits of Carbon Pricing

In addition to its environmental and economic benefits, a ‘carbon price’ creates opportunities to achieve a number of co-benefits.

Revenue Opportunities

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.

The first priority is to protect low income Canadians from any increased costs of living, to compensate households in regions at risk of undue impacts (while not reducing the incentive to reduce GHG emissions) and to protect the international competitiveness of trade-exposed manufacturing sectors that are demonstrably at risk of “carbon leakage”⁴⁴.

The second priority is to use the funds to help meet Canada’s greenhouse gas emission reduction targets and Canada’s international climate finance obligations, and to help Canada adapt and build resilience to climate change impacts here in Canada. (See, for example, the *Green Innovation and Technology Innovation Fund* below, and *Energy Innovation, Leadership in Global Climate Finance, and Adapting and Building Resilience to Climate Change*, later in this document.)

Beyond those allocations, one of the key opportunities is the ability to promote the 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.

Another fiscal policy opportunity created by ‘carbon pricing’ 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 price’ can help fill that gap in a sustainable way, because they are based on consumption rather than income.

³⁸ Canadian Chamber of Commerce, *Environment – Our Position* (web site page, accessed 14 September 2014), says “We favour a price on carbon”, <http://www.chamber.ca/advocacy/issues/environment/>

³⁹ World Bank, 3 June 2014, Statement, *Putting a Price on Carbon*, with excerpts: “The latest report from the United Nations Intergovernmental Panel on Climate Change makes clear the importance of putting a price on carbon to help limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels” and “Pricing carbon is inevitable if we are to produce a package of effective and cost-efficient policies to support scaled up mitigation”, <http://www.worldbank.org/content/dam/Worldbank/document/Carbon-Pricing-Statement-060314.pdf>⁴¹ <http://www.worldbank.org/en/news/feature/2014/09/22/governments-businesses-support-carbon-pricing>

⁴⁰ World Business Council for Sustainable Development, 19 April 2011, WBCSD publishes Carbon Pricing brief, <http://www.wbcd.org/Pages/EDocument/EDocumentDetails.aspx?ID=13352>

⁴¹ <http://www.worldbank.org/en/news/feature/2014/09/22/governments-businesses-support-carbon-pricing>

⁴² Sustainable Prosperity Policy Brief, January 2011, *Canadian Business Preference on Carbon Pricing*, <http://www.sustainableprosperity.ca/dl329&display>

⁴³ 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>

⁴⁴ Carbon leakage refers to situations where production is relocated to a jurisdiction with less stringent emission controls.

Another important co-benefit for Canada of a carbon pricing policy is in the area of innovation and productivity. Both areas are of perennial concern, being key determinants of Canada's 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.⁴⁵

Driving Innovation and Productivity

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.⁴⁶ 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.⁴⁷

For more detailed Green Budget Coalition 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)*.⁴⁸

Complementary Measures

Green Innovation and Infrastructure Technology Fund

To utilize carbon pricing revenues to achieve innovation and emission reduction benefits on a larger scale across the Canadian economy, the GBC encourages the Government of Canada to consider investing in an ongoing green innovation and infrastructure technology fund, building on models that exist in Quebec,⁴⁹ Alberta,⁵⁰ and British Columbia⁵¹ to invest in the development and deployment of technologies and infrastructure that will help us transition to a prosperous low carbon future.

This fund could be used to finance projects and technologies that lead to emissions reductions in Canada's economy in the short- and medium-term, including the high emission-growth energy sector and the emerging clean energy and clean technology sectors, complementing the efforts of organizations like Sustainable Development Technology Canada, as well as to expand upon green infrastructure investments, such as transit, from the Building Canada Plan funds.

A robust Canadian clean energy and clean technology sector could yield not only emission reductions, but also generate considerable economic opportunities in global markets in which demand for such solutions is exploding.

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⁴⁵ 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>

⁴⁶ 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

⁴⁷ Sustainable Prosperity Policy Brief, Carbon Pricing, Innovation, and Productivity, June 2010, <http://www.sustainableprosperity.ca/article344>

⁴⁸ Available from <http://greenbudget.ca/category/pastrecommendations/>

⁴⁹ Québec, Le Fonds vert, <http://www.mddelcc.gouv.qc.ca/ministere/fonds-vert/>

⁵⁰ Climate Change and Emissions Management Corporation, <http://ccemc.ca/#sthash.MdYGVkUy.dpuf>

⁵¹ British Columbia Ministry of Environment, Innovative Clean Energy (ICE) Fund, http://www.env.gov.bc.ca/cas/mitigation/ice_fund.html



Energy Innovation: Strategic Opportunities

Recommendation Summary

Energy storage tax incentives and electric vehicle infrastructure investments represent two low-cost opportunities to help create a more efficient energy system in Canada. By removing two barriers in the existing system, renewable energy supplies will better match demand patterns and re-charging will be available for electric vehicle users in high-demand areas.

The electricity and transportation sectors are two of the four largest sources of greenhouse gas (GHG) emissions in Canada, together representing 36 per cent of Canada's emissions. As such, innovation in these sectors could play a key role in Canadians capitalizing on global commercial opportunities in clean energy, in reducing GHG emissions, and in advancing Canada towards the government's aspirational goal of generating 90 per cent of our electricity from non-emitting sources by 2020.⁵²

To help accelerate innovation and achieve the associated benefits for Canadians, the GBC recommends that the federal government adopt these key strategic opportunities in Budget 2015, as part of a broader suite of energy innovation and climate change leadership actions:

1) Invest in infrastructure to support electric vehicle mobility:

- **Kick start a national fast-charging electric vehicle infrastructure by investing \$12 million into travel corridor pilot projects** around major urban centres with favourable conditions for electric vehicles.

2) Provide tax incentives to electricity storage, to benefit renewable energy deployment in every province and territory, and maximize the efficient use of existing infrastructure:

- **Amend Classes 43.1 and 43.2** of the *Income Tax Act* to specify that capital cost allowances also apply to expenditures on tangible stand-alone electricity storage assets, regardless of the electricity source.

Total Recommended Investment:

- **\$12 million in 2015 for electric vehicle infrastructure, and**
- **About \$32 million in tax expenditures over five years, and roughly \$2 million annually in subsequent years.**

⁵² 2008 Speech from the Throne, <http://www.parl.gc.ca/Parlinfo/Documents/ThroneSpeech/40-1-e.html>

Background and Rationale

The electricity and transportation sectors are two of the four largest sources of GHG emissions in Canada, representing 36% of Canada's emissions.⁵³

Canada's renewed funding for Sustainable Development Technology Canada, a world-renowned organization, should play an important part in stimulating medium- and longer-term emissions reductions by helping to bring technologies from the initial stages to commercialization.

However, technology development takes time. For example, Alberta's Climate Change and Emissions Management Corporation acknowledges that some of the projects it supports will generate few or no emission reductions over the period where it provides funding; instead, the GHG benefits are expected to occur farther into the future.

There are many worthwhile actions the federal government could and should take to achieve GHG emission reductions in the shorter-term.

A recent study by the Climate Works Foundation and World Bank Group found that government policies to stimulate a shift to clean transport, improved industrial energy efficiency, and more energy efficient buildings and appliances could increase global GDP growth by an estimated \$1.8 trillion to \$2.6 trillion a year by 2030.⁵⁴ 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.

The following are two key Green Budget Coalition recommendations to help remove two barriers in the energy system, towards renewable energy supply patterns better fitting demand cycles, and recharging infrastructure being available for electric vehicle users in high-demand areas.

1. Transitioning transportation to low-carbon alternatives

Transportation is responsible for a quarter of Canada's greenhouse gas emissions and personal vehicle road transportation contributes about 2/3 of these emissions, thus they are a key opportunity for innovation and for reducing Canada's GHG emissions.

While a variety of important transportation technologies are currently being pursued, electric vehicles (EVs) have strong potential to lead to significant GHG emission reductions in the more immediate future. The federal government can play a stronger role in encouraging adoption of EVs by investing in fast-charging infrastructure in key travel corridors.

Existing fuel efficiency regulations introduced by the federal government have been effective in helping to curb greenhouse gas emissions from personal transportation, and their effectiveness will grow over time. However, a transition to electric vehicles will be necessary to reach Canada's 2020 emissions reduction targets and to make the deeper emission reductions that will be required post-2020.⁵⁵ To spur adoption in Canada, we need to grow infrastructure nation-wide.

Investing in fast-charging Electric Vehicle (EV) Infrastructure:

Electric Mobility Canada (EMC), an EV industry association, has previously proposed federal programs calling for a \$12 million investment in infrastructure.⁵⁶

While the government has supported EVs through investment into technology research⁵⁷ and manufacturing,⁵⁸ the value of EVs to their owners is often limited by how far owners can drive within range of recharging infrastructure.

⁵³ Environment Canada, National Inventory Report 1990-2012: Greenhouse Gas Sources and Sinks in Canada, Statistic is for 2012 data. <https://ec.gc.ca/ges-ghg/default.asp?lang=En&n=3808457C-1&offset=4&toc=show>

⁵⁴ Climate Works Foundation and World Bank Group, Climate-smart development: adding up the benefits of actions that help build prosperity, end poverty and combat climate change, June 2014, http://www-wds.worldbank.org/external/default/WDSContentServer?WDSID=IB/2014/06/20/000456286_20140620100846/Rendered/PDF/889080WP0v10RE0Smart0Development0Ma.pdf

⁵⁵ National Research Council. 2013, *Transitions to Alternative Vehicles and Fuels*. http://www.nap.edu/openbook.php?record_id=18264.

⁵⁶ Electric Mobility Canada, December 2010, *Driving the Rapid Adoption of Electric Vehicles in Canada*, http://www.emc-mec.ca/eng/pdf/Rapid_Adoption_of_EVs_in_Canada_December_2010.pdf

⁵⁷ 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>

⁵⁸ Industry Canada, 5 August 2011, *Minister of Industry Highlights Federal Investment in Toyota to Support Jobs in Canada*, <http://news.gc.ca/web/article-eng.do?nid=614649>

To date, there has been reasonable development of level 2 (240 v) charging in Canada. However, to connect communities and enable longer-distance travel in Canada, fast chargers (DC) are needed along Canadian highways. The expense of these chargers can be prohibitive for businesses to install; however, programs in the U.S. and British Columbia have overcome this barrier by offering tax write-offs or financial incentives to businesses and groups.⁵⁹

The Green Budget Coalition specifically recommends a total budget of \$12 million in 2015 to fund pilot projects to create a minimum network of 120 fast charging stations in Canada. This fund should target travel corridors around major urban centres with favourable conditions for electric vehicles, including integration with renewable energy supply, grid readiness and population density, to provide the range boost to get to nearby destinations. Initial stations could be focused around Montreal, Toronto, Ottawa, Vancouver, Edmonton, and Calgary. In future, a national fast charging network would be ideal, to facilitate inter-city travel.

In communities that are suitable for pilot projects, the federal government should work with provincial and municipal governments to develop this fast charging infrastructure. On highways that are solely federal responsibility, the federal government could potentially act unilaterally.

These fast-charging stations could also be financed through provincial requests for funding under the Building Canada Fund's Green Energy sub-category.

Recommendation:

Kick start a national fast-charging electric vehicle (EV) infrastructure program by investing \$12 million in 2015 into travel corridor pilot projects.

2. Fostering commercialization in electricity storage

Large-scale power storage is one of the most important technological developments that will be required to deliver clean energy at scale, given the variable production of many clean energy sources, such as wind and solar.

Electricity storage would help to integrate all types of renewable energy technology, and also help to maximize the efficient use of existing assets and infrastructure.

As such, the global market for power storage technologies will likely grow rapidly over the next 10-20 years, and measures to incent accelerated power storage technology development in the short-term could play a key role in determining whether Canadians capitalize on this growing market.

Furthermore, the recent global *pathways to deep carbonization report* indicated that Canada needs to increase the share of our electricity generated by wind and solar power from 2 per cent to 27 per cent to be "consistent with the objective of limiting the rise in global temperatures below 2°C",⁶⁰ further emphasizing the importance of facilitating clean electricity production in Canada. Canada has expertise in leading storage technologies (including power to gas, pumped hydro storage and fuel cells), but there remains a gap between pilot stage and commercialization. With the world's sixth largest electricity system, Canada has a large enough market to be able to play a leading role in de-risking and commercializing this technology.

An important policy tool to support power storage is amending the definition of Capital Cost Allowance ("CCA") in Class 43.2 of the *Income Tax Act* to include expenditures on tangible stand-alone electricity storage assets. Budget 2014 explained that "Class 43.2 of Schedule II to the Income Tax Regulations provides an accelerated CCA rate (50 per cent per year on a declining-balance basis) for investment in specified clean energy generation and energy conservation equipment. The class incorporates by reference to Class 43.1⁶¹ a detailed list of eligible equipment that generates or conserves energy by: using a renewable energy source (...); using a fuel

⁵⁹ Province of British Columbia. 2013, BC Plugging in to electric vehicle fast charger, http://www2.news.gov.bc.ca/news_releases_2009-2013/2013ENV0002-000067.htm

⁶⁰ Sustainable Development Solutions Network (SDSN) and Institute for Sustainable Development and International Relations (IDDRI), September 2014, pathways to deep decarbonisation, Canada chapter, www.deepdecarbonization.org

⁶¹ Class 43.1 was introduced in 1994 and provides an accelerated CCA rate of 30 per cent (on a declining-balance basis). Class 43.2 was introduced in 2005 and applies to properties acquired after February 22, 2005 and before 2020. The eligibility criteria for these two CCA classes are generally the same, except that cogeneration systems and waste-fuelled electricity generation systems must meet a higher efficiency standard in order to qualify for Class 43.2. While the description of proposed Budget 2015 changes refers only to Class 43.2, the changes will apply to both Class 43.1 and Class 43.2.

from waste (...); or making efficient use of fossil fuels [...] This incentive for investment is premised on the environmental benefits of low-emission or no-emission energy generation equipment and energy conservation equipment.”⁶²

Expanding the mandate to all types of electricity storage beyond fuel cells, including “power-to-gas”, would level the playing field for power storage systems that are currently excluded from this benefit. This policy change can occur by either adding an additional section to the existing 43.1 CCA class, or by amending the existing Class 43.1 section (d)(xii) which is currently limited to fuel cells, to include both chemical and mechanic energy storage assets.

Should the existing Class 43.1(d)(xii) be amended, then the section should eliminate the requirement that the energy stored be generated by photovoltaic, wind, or hydro-electric equipment, since storage can improve the efficiency of all existing forms of generation. This change would enable the deployment of bulk storage systems onto provincial electricity systems without creating the complicating requirement of only sourcing electricity that is substantially “generated by photovoltaic, wind energy conversion or hydro-electric equipment”.⁶³

While bulk storage will largely benefit renewable energy integration in the medium- to long-term, the current restrictive requirement to only source electricity from renewable sources will have the unintended consequence of making storage more burdensome for grid operators, thereby impeding its deployment at the scale required to support renewable sources.

Recommendation:

Amend Classes 43.1 and 43.2 of the *Income Tax Act* to specify that capital cost allowances also apply to expenditures on tangible stand-alone electricity storage assets.

Complementary Measures

Renewal of Natural Resource Canada’s program funding set to sunset in March 2015 and 2016, specifically for the clean energy and clean transportation themes of the Clean Air Agenda, the Clean Energy Fund, and the EcoENERGY Efficiency, will also be important to maintaining momentum in stimulating the development and utilization of more energy-efficient technologies.

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⁶² Department of Finance Canada, Budget 2014, Annex 2 – Tax Measures: Supplementary Information.
<http://www.budget.gc.ca/2014/docs/plan/aux2-1-eng.html>

⁶³ <http://canadagazette.gc.ca/rp-pr/p2/2009/2009-05-13/html/sor-dors115-eng.html>

Leadership on Global Climate Finance



Recommendation Summary

The Green Budget Coalition recommends that Canada play a leadership role in international climate change negotiations to secure global, realizable commitments for addressing climate change, including committing annual funding of at least \$400 million in 2015 and 2016 for climate change adaptation and mitigation in developing countries, through such initiatives as the Green Climate Fund and Climate and Clean Air Coalition.

Recommended Investment: At least \$400 million in each of 2015 and 2016

Background and Rationale

Adapting to the consequences of climate change and reducing greenhouse gas (GHG) emissions requires financial investment from all countries. But for developing countries, particularly those that are most vulnerable to serious impacts, the scale of investment required often goes beyond the resources they have available.

From the beginning of the global effort to tackle climate change, international agreements have called upon richer developed countries to provide financial support to developing countries to help them cope with the consequences of climate change.

Under the December 2009 Copenhagen Accord, developed countries committed specifically to provide three years of “fast-start” climate financing from 2010 to 2012, totalling US \$30 billion, and also committed to jointly “mobilize” US \$100 billion a year by 2020 “from a wide variety of sources.”⁶⁴

As countries work towards reaching a new international climate change agreement in Paris in 2015, publicly-funded climate finance will be an important element, not just to support developing countries’ actions, but also to build trust within the international negotiations and leverage private sector climate finance.

Canada’s Contribution

Canada provided its fair share of fast-start financing, totalling \$1.2 billion to support a range of initiatives

in developing countries on clean energy, green infrastructure, preventing deforestation, and many others, but with the withdrawal of Canada from the Kyoto Protocol, there is a renewed need to develop trust at the negotiations.

Furthermore, there will be challenges domestically as Canada works to develop its Intended Nationally Determined Contributions (or mitigation targets) to put forward to the United Nations Framework Convention on Climate Change (UNFCCC) by March 2015 as part of the new international climate agreement. Canada has been a leader in many elements of the negotiations, including on REDD+, adaptation and technology transfer. In other international fora, such as the Climate and Clean Air Coalition (CCAC) to address short-lived climate pollutants, Canada has been a leader in all respects. Committing ambitious annual funding offers significant opportunities to provide leadership internationally and involve the Canadian clean-tech industry in new markets.

Recent assessments of Canada’s fast-start commitments⁶⁵ concluded that:

- Canada invested far more in climate financing after the Copenhagen Accord than it did before.
- Nearly three-quarters of Canada’s commitment was in the form of loans that require repayment to Canada.
- Of the \$884 million dispersed by the Government of Canada as repayable loans to

⁶⁴ Copenhagen Accord, Paragraph 8. Available at <http://unfccc.int/home/items/5262.php>. The Accord states that the potential sources of the \$100 billion in financing in 2020 are “public and private, bilateral and multilateral” and include “alternative sources of finance.”

⁶⁵ Canadian Foodgrains Bank et al, *Protecting our Common Future: An Assessment of Canada’s Fast-Start Climate Financing*, <http://c4d.ca/publications/policy-briefs/protecting-our-common-future-report>; 2014 Fall Report of the Commissioner of the Environment and Sustainable Development, http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201410_e_39845.html

multilateral banks, approximately 73% of the funding had not yet been committed at the project level (as of May 31, 2014). This is partly attributable to issues of recipient capacities, as well as due diligence in project selection with a view to selecting innovative and transformative long-term projects.

- Over the three year period, Canada devoted less than one-fifth (18%) of its total financing effort to adaptation. Financing for mitigation is important but adaptation is the priority for vulnerable countries.

Taking the next step

Reaching the goal of mobilizing US \$100 billion in climate finance by 2020 to be used in a meaningful way by developing countries requires a significant scale-up of public and private financing and consideration of how the funding is committed. New commitments invested based on lessons learned from fast-start financing:

- Allow promising initiatives to continue;
- Ensure that vulnerable people are better prepared for the kind of extreme weather events we are already beginning to experience; and
- Allow developing countries to deploy cleaner energy now rather than locking in to high-carbon choices.

For Canada's fast-growing clean technology sector, increasing commitments of climate financing to developing countries would open up new export opportunities. As noted above, new financial commitments are also necessary at this point to build trust and momentum at the UN negotiations.

Unfortunately, Canada has not made new commitments of climate financing since the fast-start phase ended. At the September 2014 United Nations Climate Summit, more than US \$2.3 billion in new financing was committed to the Green Climate Fund (GCF) from six countries, and more are expected to announce additional funding in November 2014. Canada should consider pledging at the GCF meeting in November 2014 to build goodwill in advance of the next major UNFCCC negotiating session in Peru in December 2014.

Making a stronger contribution

Canada's fast-start financing contribution and support for the CCAC has laid a foundation that the Government of Canada can build on in the 2015-2016 period.

The Green Budget Coalition recommends that Canada begin making a more effective climate financing contribution **by committing, in Budget 2015, at least \$400 million for each of 2015 and 2016 to support adaptation and mitigation activities in developing countries.**

In allocating Canada's next tranche of climate financing, the GBC recommends that the Government of Canada:

- Aim for a 50:50 balance over time between adaptation and emission reduction initiatives;
- Continue the commendable practice of providing adaptation financing primarily in the form of grants, as Canada did during the 2010–2012 period;
- Build on promising initiatives from the fast-start period by renewing or making multi-year commitments, working with Canadian partners where success has been demonstrated;
- Reduce its reliance on repayable loan financing. While the GBC agrees that a limited use of concessional loans to finance GHG emissions reductions in the energy sector is appropriate, there is also an essential role for grants in emission-reduction activities (e.g. to build capacity and support policies); and
- If Canada does continue to provide loans for emission-reduction initiatives in the 2015–2016 period (and beyond), the government should ensure that this future loan finance be repaid to revolving funds that support further climate financing (rather than back to Canada).⁶⁶

On the global stage, the UNFCCC meeting in Paris in 2015 could be a turning point in the challenge to keep global warming below 2°C. The GBC strongly encourages the Government of Canada to play a constructive role and press for strong, binding commitments to reduce GHG emissions in the new global climate agreement.

Complementary Measure

It is also important that Canada renew funding for the international component of the Clean Air Agenda. (Regarding the Clean Air Agenda, see also *Adapting and Building Resilience to Climate Change, and Implementing the Air Quality Management System*, each later in this document.)

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⁶⁶ Accounting for, and reporting on, financing from a revolving fund would need to be done very carefully, as the fund's loans over time would no longer be new and additional.



Adapting and Building Resilience to Climate Change

Recommendation Summary

As climate change impacts on Canada's natural and human systems continue to increase, it becomes increasingly important to improve our capacity to adapt to a "new normal." The federal government plays an important leadership role in facilitating adaptation by delivering scientific information and data on climate change impacts and adaptation, convening various levels of government and other stakeholder groups, identifying adaptation priorities and providing funding to enhance adaptation planning and implementation.

To continue and strengthen this role, the Green Budget Coalition is making two recommendations:

Under its Clean Air Agenda, in 2007 the Government of Canada allocated \$85.9 million for climate change adaptation programs to four federal agencies which, in 2011, it raised to \$149.9 million for nine federal agencies over five years, which will sunset in 2016. Given the importance of climate adaptation and the urgent need for continued action, the GBC strongly recommends:

- 1) Early renewal and a continued increase of this Clean Air Agenda adaptation program funding at a level of at least \$45 million per year over five years (2016-21).

Additionally, given that incorporating climate change considerations into infrastructure investments provides significant opportunities for improving resilience and cost effectiveness of government spending, the GBC recommends that the federal government:

- 2) Integrate adaptation considerations into all infrastructure project planning and assessment under the Building Canada Plan.

Total Recommended Investment:

- 1) **\$45 million per year in renewed and expanded adaptation funding over five years (2016-2021)**
- 2) **Negligible cost on cash basis** (as funding was previously announced).

Background and Rationale:

Canada is facing increasingly volatile weather patterns which have already, and will continue to, create notable impacts across the country. This includes impacts on our built infrastructure, terrestrial and marine ecosystems, health, agriculture, natural resource industries, fresh water and tourism. The potential economic costs of these impacts are illustrated by the 2011 and 2014 floods in Saskatchewan and Manitoba, the 2013 flooding

in southern Alberta and the mountain pine beetle epidemic in British Columbia's forests.

Budget 2014's investment of \$240 million in disaster mitigation highlights the importance of being prepared for the changes to come. This represents just one of numerous measures that all governments in Canada are taking and need to continue to take to minimize the negative impacts of such climate risks and to strengthen Canada's resiliency to them. This document includes many relevant recommendations, including on *conservation science, public lands,*

wetlands, oceans, environmental health equity, science capacity, and measuring ecological goods and services. Flood-risk mapping is another prime opportunity for disaster mitigation, to provide information and support market incentives, through insurance rates, to incent Canadians to live in safer areas.

Natural Resources Canada's 2014 report on adaptation, Canada in a Changing Climate, emphasizes that, "government agencies are responsible for removing barriers and creating incentives so that people and organizations across society are more inclined to proactively adapt."⁶⁸ The federal government therefore must continue to play an important leadership role in facilitating climate adaptation by delivering scientific information and data on climate change impacts and adaptation, convening various levels of government and other stakeholders, identifying adaptation priorities and providing funding to enhance adaptation planning and action. Under the Clean Air Agenda, \$85.9 million in federal funding for adaptation was dispersed between 2007-2011 and \$149.9 million between 2011-2016. Due to these and other investments, adaptation research, awareness-raising and planning has increased significantly; however, implementation remains an issue.⁶⁹ Other key concerns include:

- The gap between available climate data and the information necessary for adaptation decision making at the provincial, territorial and municipal levels;
- Difficulty in conveying complex scientific data in a useful way; and
- Lack of information on costs and benefits of adaptation options.

Federal efforts to build Canadians' capacity to adapt to climate change have increased, however this integral funding for adaptation under the Clean Air Agenda is set to sunset in 2016. Given the importance of adaptation and the urgent need for continued action, the GBC strongly recommends early renewal and expansion of adaptation program funding, under the Clean Air Agenda, for at least \$45 million per year over five years.

Building Canada Plan – Infrastructure

Climate change has the potential to substantially impact the effectiveness and lifespan of infrastructure in Canada, particularly transportation, buildings, marine, water management and natural (green) infrastructure. Adaptive measures can be taken to limit costs and to strengthen the resiliency of infrastructure to protect Canadians' safety, economy and quality of life.

Recent extreme weather events have provided insight into what continued climatic change might mean for Canada's built and natural infrastructure: floods affecting water management and road systems; degradation of permafrost threatening the integrity of building structures; and more extreme weather events inundating coastlines and disrupting essential services. As climate change impacts continue to be felt along with other economic, social and environmental stressors, the difficulty of maintaining robust and resilient infrastructure systems is growing significantly across the country. It is becoming increasingly clear that actions must be taken to not only reduce generation of the greenhouse gases spurring climate change, but also to implement planned adaptation measures that secure critical infrastructure.

The GBC commends the New Building Canada Plan, the largest and longest federal infrastructure plan in Canada's history, providing \$70 billion over ten years.⁷⁰

Certain categories of the New Building Canada Fund such as the Disaster Mitigation Infrastructure component include language regarding reducing risks associated with climate change, improving resiliency to adverse effects of climate change and supporting an all-hazard risk assessment.

However, at a time of unprecedented infrastructure investments, it is crucial that adaptation considerations and climate data be integrated into the planning, development and assessment of all new infrastructure projects. Infrastructure that is designed and built using climate projection data will have enhanced resiliency and longevity, which will reduce costs and aid in disaster mitigation. Along with stronger infrastructure, climate change merits consideration of different types of infrastructure and their potential for facilitating reduced greenhouse gas emissions.

⁶⁸ Warren, F.J. and Lemmen, D.S., editors (2014): Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation, Government of Canada.

⁶⁹ Ibid.

⁷⁰ Infrastructure Canada. <http://www.infrastructure.gc.ca/plan/nbcp-npcc-eng.html>

The GBC was also pleased to see New Building Canada Plan categories related to water (including source water protection), waste water, waste management and green energy. Additional emphasis should be placed on natural infrastructure and conserved ecosystems as buffers to extreme weather events.

Overall, the GBC recommends that the federal government make environmental concerns central to all elements of the New Building Canada Plan infrastructure project assessments, including the National Infrastructure Component and the federal-provincial-territorial, municipal, and public-private agreements guiding the projects' implementation, through these complementary criteria:

- Ensuring resilience to more variable and extreme weather due to climate change;
- Expanding and strengthening natural infrastructure including watershed and wetlands protection and restoration;
- Promoting sustainable transportation, including public transit, infrastructure for active transportation, and more sustainable community design;
- Advancing energy sustainability through conservation, demand management, and renewable energy and energy efficiency; and
- Support for capacity-building and municipal planning for energy sustainability.

Integrating innovative green and climate-resilient 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. See, for example, Canadian Wetland Inventory, later in this document.

See also proposal for a green innovation and infrastructure technology fund in the Complementary Measures section of the earlier Carbon Pricing recommendation.

Clean Air Agenda

The GBC supports renewed funding for the full Clean Air Agenda, including its clean air regulatory agenda, clean energy, clean transportation, and international components. (See also *Energy Innovation, Leadership in Global Climate Finance, and Implementing the Air Quality Management System*, elsewhere in this document.)

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Creating Ongoing Cost Savings for Canadians via Energy Efficiency

Recommendation Summary

Energy efficiency is the cleanest, most affordable, and fastest way to make more energy available to our economy, while saving individuals and businesses money that could be better used for other priorities. The federal Office of Energy Efficiency (OEE) has played a critical role in leading Canadian efficiency efforts.

Focusing on Canadians' homes, with special attention to low-income Canadians, the Green Budget Coalition recommends that the federal government:

1. Provide a \$10 million supplement in 2015-16 to Natural Resources Canada's existing EcoENERGY programs to enable collaborative efforts with the provinces, territories, and First Nations to develop a national home retrofit plan that would upgrade the majority of homes across Canada over the next decade, providing homeowners with relief from higher energy bills while significantly lowering GHG emissions from the housing sector, utilizing grants and "pay-as-you-save" on-bill financing.
2. Begin this national initiative with a retrofit grant program for low-income families, delivered through the successful community-wide approach, starting in 2015. \$250 million per year, for six years. Propose 50% cost-sharing with provinces, to provide grants for 50,000 homes annually (at \$10,000 average cost).
3. Renew and progressively raise the budget of the OEE over an additional five years, from 2016-2021, to enable it to manage this national home retrofit plan. Starting at \$55 million, rising to \$75 million.

Recommended Investment:

- **OEE/EcoENERGY: \$10 million in 2015-2016, \$55 million in 2016-17 rising annually to \$75 million in 2020-2021**
- **Low Income Retrofits: \$250 million per year, for five years**

Background and Rationale

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.⁷⁰

The energy used to heat Canadian homes, run appliances and keep lights on is responsible for

about 14 per cent of Canada's total greenhouse gas emissions.⁷¹ 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, at a cost to both consumers' pocketbooks and the environment.

The federal government has taken important steps to improve energy efficiency in the past, but there

⁷⁰ For example, a recent study by Canada Energy Systems Analysis Research found that from 1995 to 2010, energy efficiency measures have meant that the Canadian demand for fuels and electricity only rose by 12% while the nation's GDP rose 46%. Canada Energy Systems Analysis Research, *The Secret Life of Canada's Energy Systems*, May 2014, <http://www.cesarnet.ca/blog/secret-life-canada-s-energy-systems>. Without energy efficiencies, Canada would have needed an additional 3,246 PJ per year of new energy.

⁷¹ Natural Resources Canada, *Energy Efficiency Trends in Canada 1990 to 2010*, March 2013, http://publications.gc.ca/collections/collection_2014/rncan-nrcan/M141-1-2010-eng.pdf

is much to be done to keep energy bills affordable for Canadians. 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.⁷² Yet of the over nine million homes in Canada, only about 8 per cent have been retrofitted to improve efficiency as a result of government programs.

Importantly, energy costs are particularly challenging for low- and fixed-income Canadians yet, while these Canadians could most notably appreciate the benefits of efficiency measures, they are also often least able to afford the required initial investment.

For these reasons, the GBC recommends that the federal government work with the provinces, territories and First Nations to develop a long term national home retrofit plan – focusing first in 2015 on lower-income households. (For example, in the U.K.’s home energy efficiency initiative, half of all measures for home energy efficiency are directed towards low-income households).

The proposed low income retrofit program should be delivered by provincial agencies and should follow the successful community-wide approach documented by Green Communities Canada⁷³ using local non-profit delivery agents to create local jobs, and coordinated with social agencies trusted by the program recipients.

For more than a decade the federal Office of Energy Efficiency (OEE) has played a critical role in leading Canadian energy efficiency efforts, producing tangible benefits that have led to cost savings for consumers, local job creation across Canada and economic stimulus. The OEE has led and coordinated initiatives covering all sectors of the economy including the EcoEnergy programs, appliance efficiency standards, housing and building energy codes, the Smartway freight transport program, Portfolio Manager for commercial buildings, and support for innovative financing of energy efficiency projects.

The OEE has developed sound working relationships with provincial and territorial governments and utilities who deliver their own efficiency programs. It is therefore crucial that the OEE continue to be the federal government’s flagship organization for providing national energy efficiency services

and coordinating new initiatives like the proposed national home retrofit plan.

Looking beyond Budget 2015, the GBC encourages a national program targeting 40 per cent of existing housing stock retrofitted by 2020, and 80% by 2025. For those not on low incomes, long term “pay-as-you-save” financing should be provided that allows homeowners to pay for retrofits out of the savings they achieve – building on successful programs being piloted in Toronto⁷⁴ and Manitoba⁷⁵. A national revolving loan fund could support this financing over many years at reasonable cost. This strategy would bring Canada in line with similar efforts in the U.S. and the U.K.

Any program that helps reduce energy costs puts more money in the hands of households and businesses, similar to a permanent tax cut, freeing up capital and discretionary spending power that can be used to invest more productively in the wider economy. In a 2012 study⁷⁶ covering 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 billion, and create jobs equivalent to 625,000 job years.

In addition, home retrofits increase families’ comfort at home.

Alternative Measures

Solar Home Renovation Tax Credit

A Solar Home Renovation Tax Credit, along the lines of the government’s previous Home Renovation Tax Credit, could achieve some of the benefits of a broader home retrofit program.

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⁷² Natural Resources Canada, *Report on the Review of Clean Energy Initiatives*, 25 March 2011.

⁷³ For a full description and examples of the community wide approach see <http://www.greencommunities.nonprofitwebsites.ca/programs/home-energy-solutions/low-income-retrofits/>

⁷⁴ Toronto’s Home Energy Loan Program (HELP) <http://www1.toronto.ca/wps/portal/contentonly?vnextoid=79b5fbfa98491410VgnVCM10000071d60f89RCRD>

⁷⁵ Power Smart PAYS Financing http://www.hydro.mb.ca/your_home/power_smart/pays/index.shtml

⁷⁶ Environment Northeast, *Energy Efficiency: Engine of Economic Growth in Eastern Canada*, May 2012, http://www.env-ne.org/public/resources/ENE_EnergyEfficiencyEngineofEconomicGrowth_EasternCanada_EN_2012_0611_FINAL.pdf. 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.



*Achieving Canada's
Nature Conservation
Commitments:*

*Protecting our life
support system*



Achieving Canada's Nature Conservation Commitments: Protecting our life support system

Recommendation Summary

In May 2014, the federal government announced the initial phase of a National Conservation Plan, providing welcome support for important conservation programs, including significant investments in private land stewardship, through the Natural Areas Conservation Program, in wetlands, as well as support for marine protected areas.

Building on these initial steps, we recommend the federal government focus next on achieving its internationally agreed-to 2020 conservation targets, with a particular focus on protecting public lands and waters and investing in science to ensure Canada's actions to meet our protected areas targets are effective and efficient.

While the federal government re-affirmed its commitment to Canada's international biodiversity targets (known as the Aichi Targets), including protecting 17% of our land and inland waters and 10% of our marine and coastal areas by 2020, in its announcement of a National Conservation Plan,⁸³ there is not yet any plan in place to achieve them. A roadmap to meeting the 2020 Aichi Biodiversity Targets is urgently needed and should be at the heart of Canada's National Conservation Plan.

Meeting Canada's agreed-to international conservation targets is a shared responsibility of all jurisdictions in Canada, but the federal government has a particularly important leadership role to play, in leading a coordinated effort to protect Canada's biodiversity, starting with a science-based plan to achieve the Aichi Targets; and by implementing conservation actions in areas of federal jurisdiction – including federal protected areas, migratory bird conservation, species at risk, ocean and fisheries management and representing Canada in international conservation agreements and fora.

Given that governments (federal, provincial, territorial and Aboriginal) manage about 90% of our land base and all of our ocean estate, we recommend a particular focus on protecting Canada's public land and water – a notable gap in the first phase of the federal government's conservation plan.

To strengthen the National Conservation Plan, the GBC recommends that the federal government make the following investments in Budget 2015:

- 1. Protecting Canada's public land and water:** \$100 million per year to deliver on the federal government's areas of responsibility in meeting Canada's international target of protecting at least 17% of our lands and freshwater and 10% of our oceans by 2020:
 - **National Parks:** \$40 million per year ongoing to **advance the development of Canada's national parks system and ensure Parks Canada's science-based conservation programs are adequately resourced**, plus a one-time investment of \$50 million for land acquisition and other national park establishment costs.

⁸³ <http://www.pm.gc.ca/eng/news/2014/05/15/pm-delivers-remarks-new-maryland>

- *Environment Canada protected areas*: \$40 million per year, ongoing, for Environment Canada to **create and manage new National Wildlife Areas and to properly monitor and manage the existing system of National Wildlife Areas and Migratory Bird Sanctuaries to protect wildlife habitat.**
 - *Conservation Science Support*: \$20 million per year for five years to **provide science support** for regional conservation planning and actions with a particular focus on advancing interconnected networks of terrestrial and marine protected areas.
- 2. Species at Risk Act Implementation:** \$40 million per year, for five years, to **renew federal Species at Risk Act implementation funding** currently scheduled to “sunset” in March 2015.

As noted in the federal Environment Commissioner’s fall 2013 report, there is still a significant backlog in completion of species recovery documents, as well as a gap in development of policy tools needed for stakeholders to understand and move forward with their own protection measures for species. This federal investment, a slight increase over Budget 2012’s renewal of previous funding, is intended to overcome this backlog.

The GBC also encourages further federal funding for marine protected areas, fisheries management, migratory birds and wetlands to ensure actions in these areas achieve Canada’s commitments under the Aichi Targets.

Background and Rationale:

As Canadians we are proud stewards of much of the world’s remaining wilderness, rich wildlife, vast freshwater lakes and rivers, and the world’s longest coastline. Yet, Canada’s wild species and spaces face unprecedented threats from an expanding human footprint and changing climatic conditions.

The federal Commissioner of Environment and Sustainable Development noted in the fall 2013 report that

*Despite its long-standing tradition of leadership in conservation, Canada continues to lose ground in key areas as these pressures increase. For example, scientists have documented deteriorating biodiversity conditions in all of the main types of ecosystems in Canada.*⁸⁴

Protecting Canada’s natural heritage for the benefit of current and future generations of Canadians requires collectively scaling up conservation efforts from coast to coast to coast.

The 2020 Aichi biodiversity targets, endorsed in 2010 by Canada and the international community under the United Nations Convention on Biological Diversity, provide a comprehensive framework for moving forward with the actions needed to effectively conserve nature.

Achieving these targets is a critical next step to safeguard the natural life support system all people depend on for survival and well-being. With five years left to deliver on these international commitments, Canada still has a long way to go. For example, the protected areas target (Target 11) is to protect at least 17% of land and 10% of the oceans by 2020.

⁸⁴ 2013 Fall Report of the federal Commissioner on Environment and Sustainable Development: http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201311_00_e_38670.html

Currently only 10% of Canada's landscape and 1% of our oceans are protected.

The good news is that conservation action like the creation of protected areas provides enormous benefits for Canadians, not only protecting our treasured natural heritage, but also offering cost-effective "natural solutions" that support sustainable resource economies, 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.⁸⁵

1) Investing in protecting Canada's public land and water:

Globally parks and protected areas are recognized as cornerstones of conservation strategies. For example in 2010 the World Bank noted that,

An ecologically representative, diversified and well-managed protected areas system is the most effective way to safeguard biodiversity.

World Bank (2010)⁸⁶

So far only 10% of Canada's lands and 1% of our oceans are protected, far less than what is required to protect healthy ecosystems and to achieve the internationally agreed upon targets of protecting at least 17% of our land and freshwater, and 10% of marine and coastal areas by 2020, with a particular focus on areas of importance for biodiversity and ecosystem services.

With a full 90% of Canada's land base and all of our ocean estate managed by governments (federal, provincial, territorial and Aboriginal) on behalf of Canadians as public lands and water, it is essential for all jurisdictions to significantly expand their public protected areas systems if Canada is to meet this international protected areas target.

The federal government has an important contribution to make by completing well-designed and well-managed systems of national parks (Parks Canada Agency), national wildlife areas (Environment Canada) and marine protected areas (Fisheries and Oceans Canada, Parks Canada, Environment Canada).

Investing in these protected areas programs is a cost-effective way to protect Canada's wildlands and wildlife (including habitat for species at risk); benefit the Canadian economy, and support individual and community health and well-being.

National Parks

Recommended investments:

Creating New National Parks: \$20 million per year ongoing, plus a \$50 million one-time investment for land acquisition and other establishment costs to advance the development of the national parks system.⁸⁷

Protecting National Parks: \$20 million per year, ongoing, to support the conservation science and monitoring capacity needed to ensure the protection and restoration of healthy ecosystems in our national parks.

National parks are the federal government's flagship program for protecting significant examples of Canada's diverse landscapes and the wildlife that live there.

They are beloved by Canadians as iconic symbols of our national identity, and play a critically important role in protecting Canada's magnificent lands, waters and wildlife. They also create jobs,⁸⁸ provide ecosystem services such as clean water and carbon storage for Canadians, contribute significantly to our economy, and support human health and well-being by providing places where people can connect with nature and enjoy a healthy, active lifestyle.

⁸⁵ 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, See summary at http://img.teebweb.org/wp-content/uploads/Study%20and%20Reports/Reports/National%20and%20International%20Policy%20Making/Executive%20Summary/National%20Executive%20Summary_%20English.pdf

⁸⁶ World Bank (April 2010), Valuing protected areas. World Bank GEF Operations, Washington DC, http://www.cropwildrelatives.org/fileadmin/templates/cropwildrelatives.org/upload/documents/Valuing_Protected_Areas.pdf

⁸⁷ 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.

⁸⁸ Outspan Group, 2011, Economic impact of Parks Canada. <http://www.pc.gc.ca/eng/docs/bib-lib/econo2011.aspx>

Canada has a long-standing goal of protecting examples of each of the country's diverse natural regions in our system of national parks, but to date significant gaps remain.⁸⁹

Creating new national parks that are well-designed and well-managed, will be essential to deliver on our international commitment of protecting at least 17% of our land and freshwater by 2020. Work is well advanced towards creating new national parks in several regions of Canada. However, renewed federal investment is required, including to continue good faith negotiations of park establishment agreements with Indigenous peoples, other governments and interests.

Recent federal budget cuts have significantly impaired the Parks Canada Agency's ability to deliver on its mandate of protecting and presenting our existing national parks. For example, the ecosystem science and monitoring program which provides the necessary information for Parks Canada to protect our national parks has lost fully one third of its human resource capacity. The impact of these cuts was highlighted in the Fall 2013 Report from the Commissioner on Environment and Sustainable Development, who noted that, as a result of the decrease in resources:

*...there is a significant risk that the Agency could fall further behind in its efforts to maintain or restore ecological integrity in Canada's national parks.*⁹⁰

A reinvestment in conservation science and monitoring capacity in our national parks is urgently needed to ensure our national parks are protected for future generations to enjoy.

National Wildlife Areas and Migratory Bird Sanctuaries

Recommended Investment

Creating and managing new National Wildlife Areas: \$5 million per year, ongoing, to establish and manage new National Wildlife Areas⁹¹

Protecting National Wildlife Areas and Migratory Bird Sanctuaries: \$35 million per year in ongoing funding for Environment Canada to properly monitor, manage and update infrastructure in the existing system of National Wildlife Areas and Migratory Bird Sanctuaries, to achieve effective protection of fragile ecosystems, and safeguard habitat, including that of endangered species.

Environment Canada's network of 54 National Wildlife Areas (NWAs) and 92 Migratory Bird Sanctuaries (MBSs) encompasses vital habitats for terrestrial and marine wildlife across the country. It protects fragile ecosystems, including substantial marine and coastal areas, shelters many endangered species, and provides habitat for significant concentrations of migrating and breeding birds. However, these sites have been woefully under-resourced for over two decades, which is jeopardizing their conservation effectiveness and accessibility for Canadians. With long overdue investments in site management, monitoring and updated infrastructure, the network could become an important gateway to connect Canadians with nature and promote a culture of conservation, as highlighted by the National Conservation Plan, and supported by Aichi Target 1.

In a 2013 review of this program, the federal Commissioner of Environment and Sustainable Development found that the majority of NWAs and MBSs are not achieving their purpose of protecting ecological integrity of the sites for the benefit of wildlife, including species at risk.⁹² This 2013 audit found that limited progress had been made since similar findings were reported in a 2008 Commissioner's report. Lack of adequate, long-term funding for the monitoring and management of the network is at the root of this lack of progress.

⁸⁹ See the National Park System plan at: <http://www.pc.gc.ca/eng/docs/v-g/nation/index.aspx>

⁹⁰ 2013 Fall Report of the federal Commissioner on Environment and Sustainable Development, Chapter 7: http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201311_00_e_38670.html

⁹¹ Priority should be given to funding the establishment of the Govenlock-Antelope Coulee NWA (SK), the One-Four NWA (AB), and unprotected sites overlapping globally significant Important Bird Areas and RAMSAR Significant Wetlands. Ongoing operational funding should be prioritized for Ninginaniq NWA (NU), Akpait NWA (NU) and Qaulluit NWA (NU).

⁹² 2013 Fall Report of the federal Commissioner on Environment and Sustainable Development, Chapter 4, http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201311_04_e_38674.html#hd3a

Habitat loss and degradation are recognized as the key threats to plants and animals in Canada. Investing in updating and implementing site management plans and improving the protection status of National Wildlife Areas and Migratory Bird Sanctuaries presents an important opportunity for the federal government to make cost effective progress on biodiversity conservation.

Currently Environment Canada does not have the resources required to properly manage these sites. As a result, they cannot monitor the state of NWAs and MBSs, nor do they have resources to update management plans or basic infrastructure such as signage. In 2011, Environment Canada assessed that 90 percent of National Wildlife Areas did not have adequate management plans.⁹³

At the same time, Environment Canada is working with the territorial government, First Nations, industry and conservation organizations in the NWT to create several large new NWAs through the Northwest Territories Protected Areas Strategy. Once completed, resources will be needed to work with partners to develop management plans based on science and traditional knowledge, and to implement science and traditional knowledge-based monitoring programs in collaboration with local communities.

Similar investments are needed for ongoing co-management of three recently established NWAs on Baffin Island.

The divestiture and transfer of management of former Prairie Farm Rehabilitation Administration (PFRA) lands from the federal government to the provinces has resulted in two significant opportunities to establish new National Wildlife Areas at a very modest cost: first, the Antelope Coulee National Wildlife Area, capturing over 700 square kilometers of native grassland comprising the former Govenlock, Naslyn and Battle Creek PFRA community pastures in southwest Saskatchewan; and second, the 170 square kilometers of dry mixed grass prairie comprising the former OneFour Research Farm in southeast Alberta.

Marine Protected Areas (*see Oceans section below*)

⁹³ Ibid.

Conservation Science Support

After more than two decades developing the Canadian Ecological Framework, governments in all jurisdictions have a consistent, national geospatial context to engage in bioregional approaches to completing and reporting on interconnected networks of protected areas on land, in freshwaters and in the ocean. While the framework provides a common conservation planning tool for all jurisdictions, there is no broader support for jurisdictions to collaborate with one another to address bioregional conservation targets, e.g., minimum levels of protection for boreal forest landscapes.

The National Conservation Plan presents an opportunity for the federal government to demonstrate leadership on Canada's conservation progress. Using the broadly applicable tools and programs it operates (e.g., Earth observation/remote-sensing technologies (RADARSAT), CANSIS, Canadian Ecological Framework, GeoConnections, etc.), the federal government could support all jurisdictions in completing the science necessary to ensure our collective work effectively conserves Canada's biodiversity and meets our domestic and international conservation targets. In addition to national coordination around conservation science being practical from an evaluation and reporting perspective, it would also be more efficient by limiting duplicated efforts across jurisdictions. This is a coordination role that the federal government is uniquely equipped to play.

The GBC recommends that the federal government invest \$20 million per year for five years to provide conservation science support for all jurisdictions' efforts to expand and monitor their protected areas networks – with a focus on:

- Providing high-resolution remote sensing imagery to conservation professionals and land managers in all jurisdictions, to facilitate cost-effective assessments of ecosystem status, landscape dynamics and natural resource potential for new protected areas, in addition to monitoring of ecological integrity and

environmental change in existing protected areas. The imagery captured by Canada's various Earth observation satellites⁹⁴ and airborne sensors could be leveraged in national parks management and interpretation, protected areas enforcement, and climate change adaptation, among many others applications.

- Conducting scientific assessments of areas of high conservation value in each of Canada's terrestrial and marine ecozones, including an assessment of the regional impacts of climate change; and
- Standardizing ecological frameworks across Canada to better identify gaps in current systems of protected areas, and to provide scientific guidance for regional conservation planning initiatives to fill these gaps on public and private lands, and in freshwater and marine environments, including consideration of climate change impacts and ecosystem adaptation.
- Collaborating with provincial, territorial and municipal governments to complete detailed floodplain mapping for populated areas across Canada, which is a key aspect of helping Canadians adapt to and prepare for climate change impacts over time. (See *Adapting and Building Resilience to Climate Change*, earlier in this document.)

As part of this effort, it would be beneficial to renew the funding for Natural Resources Canada's Satellite Station Facilities (whose funding is set to sunset in March 2015).

One cost-effective model to leverage this funding would be to support university-based "Centres of Conservation Excellence" to bring together and jointly fund academics, public and private partners and other scientists, with an initial five year goal of ensuring the best possible science is applied to planning for and expanding Canada's protected areas networks, both terrestrial and marine.

See also Strengthening Canada's Science Capacity, later in this document.

⁹⁴ Canadian Space Agency, Earth Observation Satellites - <http://www.asc-csa.gc.ca/eng/satellites/default-eo.asp>

2) Protecting Canada's species at risk: Renew *Species at Risk Act* (SARA) implementation funding

Recommended investment: \$40 million per year for five years to renew and increase "B-base" funding.

The *Species at Risk Act* (SARA) is one of Canada's key federal environmental laws. Its passage into law in 2002 represented an important step forward in protecting Canada's endangered wildlife and the habitat they need to survive. SARA is a strong law that offers potential to help endangered species survive and recover. Unfortunately, the federal *Species at Risk Act* has never been fully implemented as envisaged in the legislation.

In the absence of full implementation SARA cannot effectively meet its objective of protecting species at risk in Canada. The failure to implement a full suite of SARA policy tools and flexibility mechanisms creates tremendous uncertainty for project proponents and leaves Canada with an impaired species protection regime (though the Act itself is essentially sound) and with no one feeling particularly pleased with the status quo.

We believe that additional financial resources are necessary to deal with several different obstacles that stand in the way of full implementation of the Act.

A backlog of recovery strategies and action plans means that the majority of species at risk are not moving through the five stages of the recovery process under SARA. This critique has been long standing and has been highlighted in several reviews and audits of SARA, both internal and external. As was noted in the 2012 report of the Audit and Evaluation Branch of Environment Canada:

*"... [A] joint posting plan will be published and updated as required on the SARA registry by March 2013 in order to outline the species and recovery documents that will be posted and consulted on for a given fiscal year. Despite this prioritization, it will not be possible for departments to clear the backlog of overdue recovery documents in the short term within current resources."*⁹⁵

Likewise, the Commissioner of the Environment and Sustainable Development noted in a fall 2013 audit report that:

*"Environment Canada, Fisheries and Oceans Canada, and Parks Canada have not met their legal requirements for establishing recovery strategies, action plans, and management plans under the Species at Risk Act. While the organizations have made varying degrees of progress since our 2008 audit in completing the recovery strategies they are responsible for, 146 recovery strategies remain to be completed as of 31 March 2013. Out of the 97 required action plans, only 7 were in place. The required management plans for species of special concern were not completed in 42 percent of cases."*⁹⁶

Another barrier to full implementation pertains to the absence of funding to enable the development of policies to guide the full utilization of mechanisms under SARA such as section 11 conservation agreements or section 73 permits and agreement (the so-called 'flexibility mechanisms'). These flexibility mechanisms are important because they encourage participation and buy-in from individuals, entities and sectors active on the ground where the species live, and where protection/stewardship efforts can be most effective. These mechanisms can be used to encourage the protection of species and their critical habitat and are an important aspect of the Act that has been entirely underutilized to date. One reason for the slow pace of deploying flexibility mechanisms is that they require an interdepartmental policy framework for implementation as well as sufficient financial resources be brought to the table to incentivize stakeholders and to monitor effectiveness over time. By applying more of its resources to implement recovery plans and strategies the federal investment can be used to leverage private sector funds and in-kind contributions to implement SARA on the ground. Federal leadership is needed, especially with respect to species for which the federal government has constitutional responsibilities such as migratory birds and marine species, to deliver on the full potential of SARA.

⁹⁵ Government of Canada, 2012, Evaluation of Programs and Activities in Support of the Species at Risk Act, 2012, http://www.ec.gc.ca/ae-ve/6AE7146E-0991-4C2F-BE2F-E89DF4F8ED1E/13_018_EC_ID_1568_PDF_accessible_ANG.pdf.

⁹⁶ 2013 Fall Report of the Commissioner of the Environment and Sustainable Development, Chapter 6, http://www.oag.bvg.gc.ca/internet/docs/parl_cesd_201311_00_e.pdf

Healthy Ocean, Healthy Communities

Build on the National Conservation Plan Commitments to: *Manage Ocean Development, Meet Canada's International Conservation Targets and Transform Fisheries*

Recommended Investment:

\$45 million per year (on top of National Conservation Plan funding), ongoing, for:

- A Network of Marine Protected Areas, and

\$17.2 million per year for three years, for:

- Ocean Planning tools: \$10M/year
- Transforming fisheries: \$7.2M/year

Protecting Ocean Habitat

In May 2014 the government announced \$37 million for marine and coastal conservation as part of its National Conservation Plan (NCP). The Green Budget Coalition congratulates the government for this significant investment to protect Canada's oceans and to re-committing to international biodiversity targets to protect 10% of Canada's marine waters by 2020.

To ensure Canada is on track to achieve these international commitments, the Green Budget Coalition recommends the designation of new Marine Protected Areas (MPAs) covering at least 6% of Canada's waters by 2017. The funding through the NCP is a good first step at working towards this goal, but much more needs to be invested in order to meet the 2020 target and to showcase significant progress when Canada celebrates its 150th birthday in 2017.

MPAs contribute to Canada's \$39 billion a year ocean economy.⁹⁷ Establishing a network of MPAs will help recover fish stocks, boost nature-based tourism, buffer the impacts of climate change and acidification by ensuring resiliency⁹⁸, and maintain stable jobs for the future. To enable this network, bioregional planning should be conducted to identify an ecologically representative and well-connected network of MPAs through the National Framework for Canada's Network of Marine Protected Areas.

Recommended Investment:

\$45 million per year on top of the NCP funding, ongoing (\$30 million for Parks Canada to create and manage National Marine Conservation Areas, \$14 million for Fisheries and Oceans Canada to designate and manage *Oceans Act* marine protected areas and \$1 million for Environment Canada to establish and manage Marine Wildlife Areas)

Managing Ocean Development

Investing in ocean planning 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 stakeholders, 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. Cumulative effects should be evaluated through environmental impact assessments and risk assessments in all bioregions and special consideration should be given to areas described as ecologically and biologically significant areas (EBSAs) and sensitive benthic areas.
- **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 biodiversity and ecosystem services** (e.g., climate regulation, seafood provision, 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.

⁹⁷ <http://www.dfo-mpo.gc.ca/oceans/industries/index-eng.htm>

⁹⁸ http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/pdf/assess/2014/pdf/Full-Report_Eng.pdf

Tie these foundational elements together and ensure federal jurisdictional compliance in regional **Ocean Planning**, like:

- BC's Marine Planning Partnership (MaPP),
- Atlantic's Regional Oceans Plan (ROP),
- Beaufort Sea Partnership's community conservation planning, and
- Nunavut's Land Use Plan.

This will ensure an integrated, ecosystem-based approach to the planning, protection, management and responsible use of marine areas and their resources.

Recommended Investment:

\$10 million per year for three years

Transforming Fisheries

Canada boasts one of the most diverse fisheries in the world, sourced from three oceans and the Great Lakes. These fisheries are economically important, both in terms of value and employment. In 2012, Canada's fish and seafood exports were valued at \$4.1 billion.⁹⁹ Canada's commercial fishing and aquaculture sectors provide more than 80,000 direct jobs to Canadians.¹⁰⁰ Managing Canada's fisheries sustainably and equitably is vital to the livelihoods of rural Canadians and can provide enhanced food security for all Canadians. Improved fisheries management requires continued investments, including the following:

Implementing existing fisheries conservation policies and laws, specifically the Sustainable Fisheries Framework which includes the Policy for Managing the Impact of Fishing on Sensitive Benthic Areas, Policy for Managing Bycatch, and the Guidance for the Development of Rebuilding Plans under the Precautionary Approach Framework.

Recommended Investment:

\$3 million per year for three years to DFO to implement these policies through the Integrated Fisheries Management Process (IFMP).

Rebuilding fisheries by establishing and implementing science-led conservation plans and rebuilding strategies, with targets and timelines for all depleted fish. Ensuring sustainable fisheries into the future is vital for the livelihood of tens of thousands of rural Canadians.

Recommended Investment:

\$2.5 million per year for three years to establish meaningful harvest control rules and precautionary reference points.

Investing in the capacity of fisheries associations to develop co-management plans. Supporting capacity to manage processes such as supplying lobster tags, on-line licensing, at sea monitoring, electronic logbooks, video monitoring, etc. will in the long run result in stronger and more independent fishing communities.

Recommended Investment:

\$1.7 million per year for three years. Funding should be application-based and require matching funds from the community, private sector and other levels of government.

Total recommended investment for transforming fisheries:
\$7.2 million per year for three years

*For the GBC's recommendation on the federal Fisheries Protection Program, please see *Protecting Canada's Fresh Water*, later in this document.*

⁹⁹ Agriculture and Agri-Food Canada, Industry Overview, <http://www.agr.gc.ca/eng/industry-markets-and-trade/statistics-and-market-information/by-product-sector/fish-and-seafood/fish-and-seafood-canadian-industry/industry-overview/?id=1383756439917>, accessed 23 October 2014.

¹⁰⁰ Ibid.

Conserving 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 thirty 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*).

In June 2012, the North American Bird Conservation Initiative (Canada) published the first *State of Canada's Birds* report.¹⁰¹ 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, both positive and negative, of human activity on bird populations, as well as the need for urgent action for bird conservation.

The report shows that some groups of birds in Canada are doing well. For example, most 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* although some species of ducks, notably among the sea duck group, are declining. On the other hand, many species of shorebirds, grassland birds and birds that feed on flying insects are doing very poorly, with some species having declined by over 80% in the forty years of measurement.

Given dramatic declines in many migratory bird populations, the following investments are needed to understand and remedy the problem:

Research and monitoring (\$10 million per year) 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.

Conservation action (\$10 million per year) is required in parallel to research and monitoring. 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". But to prevent vulnerable species from further decline, Canada needs pro-active bird conservation programs that address threats through their lifecycle. Canada should capitalize on the existence of broad coalitions of willing partners, including First Nations, the private sector, NGOs and other levels of government, to develop plans that address human and natural causes of avian mortality, to help advance migratory bird conservation here and abroad.

Individual Canadians also have an important role to play. Tens of thousands of individual Canadians are actively supporting conservation of birds and their habitats through private funds. Citizens are also contributing valuable bird monitoring data and time to safeguarding birds and their habitats. The *State of Canada's Birds* report, for example, was only possible because of the efforts of thousands of Canadian volunteer observers. Over 240 of Canada's 600 Important Bird and Biodiversity Areas are regularly monitored by volunteer caretakers throughout the year.

Partnerships in Canada and abroad (\$10 million per year) 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.

Canada has historically played a small but important leadership role in conservation in other Western Hemisphere countries, many of which 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, in partnership with organizations like Birdlife International. This needs to be a central element of an effective Canadian Migratory Bird Conservation Program.

¹⁰¹ North American Bird Conservation Initiative Canada. 2012. *The State of Canada's Birds*, 2012. Environment Canada, Ottawa, <http://www.stateofcanadasbirds.org/>

The Canadian Wetland Inventory

The Canadian Wetland Inventory (CWI) is an essential tool for identifying and tracking the presence of wetlands on the Canadian landscape. This type of tool provides key information to governments, industry and the public that aim to develop sustainably – in particular to avoid and minimize impacts to sensitive features like wetlands. While considerable work has been done on the CWI to date, there are still many information gaps that must be filled.

The Green Budget Coalitions is requesting that the Government of Canada make a five-year financial commitment of \$10 million per year (\$50 million total) to complete the Canadian Wetland Inventory.

Geo-spatial data, such as the CWI, provides government and proponents with important information data layers upfront enabling informed decision-making about habitat management, mitigation for lost or damaged wetlands, and informed natural resource development. A comprehensive, pan-Canadian suite of data would provide a strong baseline of information in all provinces and territories, and will greatly contribute to improving the ability of all levels of government to manage their natural resources effectively and to employ best management practices across Canada.

The CWI would increase the competitiveness of Canada's natural resource sector by improving the clarity and certainty around the existence of sensitive ecological features. This information would be available to all proponents and regulatory agencies and would streamline the project permitting and approval process.

A comprehensive CWI would allow communities to plan for the retention of their green infrastructure through proactive land use planning. This would help maximize human and social health and well-being and reduce communities' reliance on expensive engineered infrastructure.

The availability of accurate and up-to-date data has been shown to improve both the efficiency and effectiveness of regulatory regimes. It also provides clarity and certainty to proponents, allowing them to proactively plan.

A completed CWI would not only provide short-term job opportunities for Canadians, it would also help to safeguard the suite of resource sector jobs by promoting the sustainability of the resource sector, including jobs related to best management practices.

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*Healthy Communities
for all Canadians*

*featuring:
Environmental
Health Equity*

Environmental Health Equity

Recommendation Summary

All Canadians should have the right to a healthy environment, but there is increasing evidence that disadvantaged and vulnerable communities bear a disproportionate burden of preventable environmental health hazards, such as pollution, environmental degradation and the effects of climate change.

The Green Budget Coalition recommends that the Government of Canada invest in an environmental health equity agenda, including initiatives to:

- Better understand the burden of preventable environmental health hazards facing disadvantaged and vulnerable communities in Canada, as well as inequalities in access to environmental health benefits;
- Assess the extent to which it may be possible to intervene so that preventable environmental health hazards do not disproportionately affect disadvantaged or vulnerable communities, and to ensure equal access to environmental health benefits; and,
- Identify and implement mechanisms to ensure that all Canadians have the opportunity to enjoy the same level of protection from environmental health hazards and access to environmental health benefits.

The Green Budget Coalition recommends a new federal Office of Environmental Health Equity be established to support ongoing assessment and to champion the integration of environmental health equity across all relevant government departments and agencies, programs, policies and activities.

Ensuring healthy environments for all Canadians will require complementary federal actions on many fronts. The best federal budgetary opportunities to improve Canadians' environmental health are outlined in the following pages, regarding protecting Canada's fresh water, remedial measures to safeguard Canadians against radon gas in certain homes, implementing the Air Quality Management System, continuing the Chemicals Management Plan, and strengthening green infrastructure in First Nations communities.

Recommended Investment: \$15 million per year, ongoing

*Recommendation endorsed by the Centre for Environmental Health Equity.*¹⁰²

¹⁰² Contact: Dr. Jeff Masuda, Director, Centre for Environmental Health Equity, and Canada Research Chair in Environmental Health Equity, jeff.masuda@cehe.ca, 204-272-1643.

Benefits for Canadians

- Reduced health inequities and a healthier population overall, with associated economic benefits in terms of health care savings and increased productivity

Background and Rationale

No matter who you are or where you live in Canada, we all need clean air to breathe and clean water to drink. All Canadians should have the right to a healthy environment, but disadvantaged and vulnerable communities bear a disproportionate burden of preventable environmental health hazards, such as pollution, environmental degradation and the effects of climate change. A recent study found that one in four low-income Canadians (25 per cent) lives within a kilometre of a major polluting industrial facility, whereas only seven per cent of the wealthiest quintile lives within this radius. Proximity to major sources of pollution results in higher levels of respiratory and cardiovascular illness for low-income Canadians.¹⁰³ This is but one example of population health inequities resulting from preventable environmental exposures.

The concept of environmental health inequity (also referred to as *environmental injustice* or *environmental racism*) describes “inadequate, unresponsive, and/or discriminatory policies that result in the concentration of multiple environmental risks, as well as inadequate access to environmental benefits among disadvantaged Canadian communities.”¹⁰⁴

The Centre for Environmental Health Equity identifies four population sub-groups in Canada that tend to bear a greater burden of adverse environmental effects on health.¹⁰⁵

- Resource-dependent communities that reside in close proximity to a predominant industry (such as agriculture, forestry, oil and gas or mining);
- Aboriginal communities, both on and off reserve;

- Low-income and ethno-racial communities typically in urban settings; and,
- Biologically vulnerable populations such as children, pregnant women and older adults.

Although various government programs and regulations aim to tackle environmental health hazards, rarely do they address population-level inequities. Canada lacks co-ordinated capacity to ensure disadvantaged and vulnerable communities have the opportunity to enjoy the same level of environmental protection as other Canadians.

Mounting Evidence of Environmental Health Inequities

- As previously noted, one in four low-income Canadians lives within a kilometre of a major polluting industrial facility, whereas only seven per cent of the wealthiest quintile lives within this radius. Proximity to major sources of pollution results in higher levels of respiratory and cardiovascular illness for low-income Canadians.¹⁰⁶
- Inuit people in Canada’s North are at greater risk of economic losses and poor health as a result of climate change. Rapid warming of the Canadian Arctic is jeopardizing hunting and many other day-to-day activities, with implications for livelihoods and well-being.¹⁰⁷
- Approximately 40 per cent of Canada’s petrochemical industry operates within a few kilometres of Sarnia and the Aamjiwnaang First Nation. Community members are exposed to a range of harmful pollutants, including cancer-causing benzene, as well as sulphur dioxide, particulate matter and oxides of nitrogen — chemicals known to adversely affect respiratory and cardiovascular health. Members of the Aamjiwnaang First Nation are challenging Ontario’s ongoing approval of pollution in Sarnia’s Chemical Valley on the grounds that it violates their equality rights, as well as their right to life, liberty and security of the person under the Canadian Charter of Rights and Freedoms.¹⁰⁸

¹⁰³ *Urban Physical Environments and Health Inequalities* (Ottawa: Canadian Institute for Health Information, March 2011). http://www.cihi.ca/CIHI-ext-portal/pdf/internet/CPHI_UPE_SUMMARY_REP_EN

¹⁰⁴ “What Is Environmental Health Inequity?” *The Centre for Environmental Health Equity*, accessed August 6, 2014, <http://cehe.ca/aboutus>.

¹⁰⁵ *Ibid.*

¹⁰⁶ *Urban Physical Environments and Health Inequalities* (Ottawa: Canadian Institute for Health Information, March 2011). http://www.cihi.ca/CIHI-ext-portal/pdf/internet/CPHI_UPE_SUMMARY_REP_EN

¹⁰⁷ *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge, UK and New York, NY: IPCC, 2014), chap. 11, http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap11_FINAL.pdf

¹⁰⁸ “Chemical Valley Charter Challenge,” *Ecojustice*, accessed August 6, 2014, <https://www.ecojustice.ca/cases/chemical-valley-charter-challenge-1>

- Women are uniquely vulnerable to chemical exposures and therefore face disproportionate risks from toxic substances in consumer products, industrial emissions and other sources. Canada's chemicals management framework overlooks the differential impacts on women's health and the possible long-term health implications for women.¹⁰⁹
- More than 13 per cent of Canadian children live in relative poverty.¹¹⁰ These children face compounding environmental health disadvantages, as lower socio-economic status tends to correlate with greater exposure to environmental health hazards and children are uniquely vulnerable to these exposures. Researchers point to "windows of vulnerability" as children grow and develop, starting even before conception when parental exposures to certain environmental contaminants might harm the sperm or egg. Fetal vulnerability to maternal exposures continues during pregnancy. The brain, lungs and reproductive systems are still developing — and are therefore vulnerable — throughout childhood and to the end of adolescence.¹¹¹
- In the urban environment, healthy housing and enriching outdoor spaces tend to co-exist in some neighbourhoods, while substandard housing, poor air quality, industrial effluents and limited green space co-exist in others. As a result of this "clustering," low-income Canadians are more likely to face multiple chronic environmental health hazards.¹¹²

A Governance Model: The U.S. Office of Environmental Justice

Canada lacks a governance structure and capacity to advance environmental health equity but can look to the United States for a model. The U.S. Environmental Protection Agency (EPA) established its Office of Environmental Justice in 1992, with the mission to facilitate Agency efforts to protect and promote environment and public health in minority, low-income, tribal and other vulnerable communities.¹¹³

The EPA defines environmental justice as "the principle that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies, and that all people should have the opportunity for meaningful involvement in decisions about activities that may affect their environment and/or health."¹¹⁴ The Office of Environmental Justice co-ordinates efforts to integrate environmental justice in all EPA programs, policies and activities.

In 1994, President Bill Clinton issued Executive Order 12898 — Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The Order, which remains in effect, requires all federal agencies to identify and develop strategies to address any disproportionately high and adverse health or environmental effects of their actions on minority and low-income populations.

Executive Order 12898 also established the Federal Interagency Working Group on Environmental Justice, chaired by the EPA administrator (equivalent to Canada's environment minister). The heads of 11 federal departments or agencies and several White House offices are represented on this working group.¹¹⁵

¹⁰⁹ Sarah Lewis, *Sex, Gender and Chemicals: Factoring Women into Canada's Chemicals Management Plan* (North York, ON: National Network on Environments and Women's Health, June 2011), http://www.nnewh.org/images/upload/attach/NNEWH_chemicals_report_for_web.pdf.

¹¹⁰ Peter Adamson, *Measuring Child Poverty: New League Tables of Child Poverty in the World's Richest Countries, Innocenti Report Card 10* (Florence: UNICEF Innocenti Research Centre, 2012), http://www.unicef-irc.org/publications/pdf/rc10_eng.pdf. Relative poverty is defined as, "living in relative poverty, defined as living in a household in which disposable income, when adjusted for family size and composition, is less than 50% of the national median income."

¹¹¹ *Child Health and the Environment – A Primer* (Toronto: Canadian Partnership for Child Health and the Environment, 2005), <http://www.healthyenvironmentforkids.ca/sites/healthyenvironmentforkids.ca/files/cpche-resources/Primer.pdf>.

¹¹² Tara Zupancic, "At the Margins and in Deep: The Need to Prioritize Equity for Children's Environmental Health" (Centre for Environmental Health Equity, n.d.), http://www.cehe.ca/sites/default/files/At%20the%20Margins%20and%20in%20Deep-3_0.pdf.

¹¹³ "Environmental Justice – Basic Information," U.S. Environmental Protection Agency, May 24, 2012, <http://www.epa.gov/environmentaljustice/basics/index.html>. It was originally called the Office of Environmental Equity. The name was changed in 1994.

¹¹⁴ "Environmental Justice – Basic Information."

¹¹⁵ "Federal Interagency Working Group on Environmental Justice," U.S. Environmental Protection Agency, accessed August 6, 2014, <http://www.epa.gov/environmentaljustice/interagency/>

The EPA considers that environmental justice will be achieved when everyone enjoys the same degree of protection from environmental health hazards, equal access to related decision-making processes and a healthy environment in which to live, learn and work.¹¹⁶ This vision has yet to be realized in the U.S. Nevertheless, the U.S. Office of Environmental Justice, Executive Order 12898 and Interagency Working Group can claim some significant achievements over the past two decades. For example, the EPA's Office of Pesticide Programs has created a new training module for risk assessors and managers to provide the tools to identify potential environmental justice issues — i.e., toxicity and exposure patterns specific to each pesticide and pesticide use that could present a disproportionate risk.¹¹⁷ The EPA's Office of Prevention, Pollution and Toxics has initiated granting programs aimed at preventing or reducing childhood lead poisoning in Aboriginal and low-income communities with older housing, where lead paint may pose a risk.¹¹⁸ The EPA's Office of Radiation and Indoor Air now provides free radon test kits and analysis to environmental justice partners and participants.¹¹⁹ (Radon is a naturally occurring gas that is the leading cause of lung cancer among non-smokers.)

More broadly, the Office of Environmental Justice, Executive Order 12898 and Interagency Working Group have helped to raise awareness in the U.S. of environmental health inequities and cemented environmental justice as a consideration in federal decision-making. In Canada, this conversation is just beginning.

Building Capacity for Action on Environmental Health Equity in Canada

The federal government should play a leadership role in bringing the environmental justice imperative into focus here. The Green Budget Coalition recommends that an Office of Environmental Health Equity be established to support ongoing assessment of preventable environmental health hazards (including pollution, environmental degradation and climate change effects), and the health benefits of environmental protection measures, on disadvantaged and vulnerable communities in Canada, and identify opportunities to intervene to prevent environmental health

inequities. The new Office could champion efforts to integrate environmental health equity in all relevant government programs, policies and activities, and assist with co-ordination. Mirroring the whole-government approach of Executive Order 12898 in the U.S., it should be established as an independent or arms-length agency (parallel to the Canadian Mental Health Commission, for example).

A Commission of Inquiry (or an alternative independent study mechanism) could also be considered to examine the burden of preventable environmental health hazards on disadvantaged and vulnerable communities in Canada, as well as inequalities in access to environmental health benefits, and assess the extent to which it may be possible to intervene to prevent environmental health inequities. The Commission could also be tasked with identifying and prioritizing mechanisms to ensure all Canadians have the opportunity to enjoy the same level of protection from environmental health hazards and access to environmental health benefits.

Healthy Environment, Healthy Canadians

The study of what makes people healthy and unhealthy is a growing field of research. Evidence is mounting that the contribution of medicine and health care is quite limited, and that spending more on health care alone will not result in significant improvements in population health in the Canadian context. Other factors are key to improving the health of Canadians.

The Public Health Agency of Canada identifies twelve key determinants of population health.¹²⁰

1. Income and social status
2. Social support networks
3. Education and literacy
4. Employment/working conditions
5. Social environments
6. Physical environments
7. Personal health practices and coping skills
8. Healthy child development
9. Biology and genetic endowment
10. Health services
11. Gender
12. Culture

¹¹⁶ "What Is Environmental Justice?" U.S. Environmental Protection Agency, accessed August 7, 2014, <http://www.epa.gov/environmentaljustice/>

¹¹⁷ "Office of Prevention, Pesticides, and Toxic Substances (OPPTS) Action Plan to Integrate Environmental Justice, 2009" (U.S. Environmental Protection Agency OPPTS, 2009), <http://www.epa.gov/environmentaljustice/resources/reports/actionplans/oppts-ej-actionplan-2009.pdf>.

¹¹⁸ Ibid.

¹¹⁹ "The Office of Air and Radiation (OAR) FY 2006 Environmental Justice Action Plan" (U.S. Environmental Protection Agency OAR, 2006), <http://www.epa.gov/environmentaljustice/resources/reports/accomplishments/oar-ej-progress-rpt-2006.pdf>.

¹²⁰ "What Makes Canadians Healthy or Unhealthy?" Public Health Agency of Canada, accessed August 7, 2014, <http://www.phac-aspc.gc.ca/ph-sp/determinants/determinants-eng.php#unhealthy>.

Each of these factors independently can influence population health, and they are also interrelated. For example, poor air quality has a detrimental effect on health, and lower-income Canadians are more likely to live close to industrial sources of air pollution.

Addressing environmental health inequities would improve population health by promoting healthy environments in general and reducing environmental burdens related to income, gender, culture and other key determinants. Moreover, with various government programs and policies aiming to prevent adverse environmental impacts on health and promote healthy environments, an integrated approach to environmental health equity will help to ensure these initiatives achieve their full potential and deliver positive outcomes for all Canadians.

Complementary Measures

Recognizing that federal and provincial/territorial governments share responsibilities for environmental matters and resource management in Canada, it will be important for the federal government to engage with provincial/territorial governments to advance an environmental health equity agenda. The Government of Canada could convene a high-level Federal/Provincial/Territorial Committee on Environmental Health Equity to lead a co-ordinated effort to integrate environmental health equity into all relevant government programs, policies and activities in Canada. This Committee would be the Canadian counterpart to the U.S. Federal Interagency Working Group on Environmental Justice.

All Canadians deserve the right to live in a healthy environment. Legal recognition of environmental rights could be achieved with an Environmental Bill of Rights or a provision in the Charter of Rights and Freedoms.¹²¹

Ensuring healthy environments for all Canadians will require complementary federal actions on many fronts. The best federal budgetary opportunities to improve Canadians' environmental health in Canada are outlined in the following pages, regarding *Canada's fresh water, protection from radon in homes' indoor air, the Air Quality Management System, the Chemicals Management Plan, and green infrastructure in First Nations communities.*

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¹²¹ See David Suzuki Foundation, *Right to a Healthy Environment*, <http://www.davidsuzuki.org/issues/health/projects/right-to-a-healthy-environment/>



Indoor Air: Tax Credit for Radon Remediation

Recommendation Summary

The Green Budget Coalition recommends that the federal government amend the *Income Tax Act* to provide a tax credit to homeowners incurring costs for radon remediation and, consequently, to increase public awareness about a serious issue, specifically:

Amend Division E of the *Income Tax Act* to add a tax credit of up to \$3,000 available to individual Canadians for radon mitigation by experts certified by the Canadian National Radon Proficiency Program where a three-month test indicates an indoor radon level above the Canadian radon guideline (currently 200 Bq/m³).

If all homes with radon above the federal guideline were mitigated, costs savings from prevented lung cancer deaths would reach over \$17 million annually.¹²²

Anticipated Cost: Little to none. Reduced income tax revenues (from using the tax credit) could be largely offset by increased income tax revenues from the radon remediation workers.

Endorsed by: Canadian Lung Association

Background and Rationale

Radon, a known carcinogen, is a naturally occurring radioactive gas arising from the decay of uranium in soil and rock. It is the second leading cause of lung cancer in Canada after smoking and is responsible for 16% of lung cancer deaths annually. Invisible, odourless, and tasteless, radon can only be detected via testing.

Since 2008, Health Canada's National Radon Program has tested nearly 15,000 federal buildings and about 14,000 residences across Canada, added radon-protection measures to the National Building Code, undertaken research into radon testing and mitigation techniques, developed a Canadian certification program for radon mitigation professionals, conducted extensive radon education and awareness programs, and repeatedly told Canadians that all homes should be tested for radon. Surveys indicate that about 7% of homes in Canada

(about 600,000 dwellings) have radon levels above the Canadian guideline of 200 Bq/m³. While some areas are known to have high radon levels, including in parts of Manitoba, New Brunswick, Saskatchewan and the Yukon, radon is present in all homes at some level and high radon levels have been found in all provinces. Health Canada's cross-Canada survey indicates a need for all homes to be tested.

Help Canadians Take This Issue Seriously and Make Radon Mitigation Affordable

Health Canada has provided important leadership on radon policy and programs. While much new construction in Canada includes radon protection measures, radon can be a significant health risk in existing homes. Public uptake of Health Canada's message about the need for radon testing has been limited. A tax credit is a logical next step from the federal government and can send a strong signal to Canadians to take this issue seriously.

¹²² Based on data from: the Public Health Agency of Canada (2014) that total direct and indirect costs of lung cancer in 2011 were \$398M; Chen, Moir and Whyte (2012) that 16% of lung cancer deaths in Canada are attributable to radon; and Chen et al's statement that, at the current Canadian action level of 200 bq/m³, the number of lives saved would be 927 (28%) out of a total of 3261 estimated radon-induced lung cancers. $\$398M \times 16\% \times 28\% = \$17.8M$

Homeowners Need Help to Offset the Costs of Radon Mitigation: Mitigation techniques to reduce indoor radon concentrations include sealing cracks and other openings in the foundation/floor, venting and/or Active Sub-Slab Depressurization (installation of a pipe and fan under the basement floor slab to vent radon from under the house preventing entry to the home). Typical mitigation costs range from \$500 to \$3,000. The federal government can help make radon mitigation affordable by adding radon mitigation as a tax credit under the *Income Tax Act*. While a permanent tax credit would be preferable, since even new housing stock may need to be remediated, a temporary five-year tax credit could incent many of the same benefits, and encourage more rapid action.

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Protecting Canada's Fresh Water

Canada's fresh waters are of national importance and a tremendous resource on a global scale. They contribute extensively to the social, ecological and economic well-being of our country. Constitutionally, the federal government holds jurisdictional responsibility for navigable water and fisheries, and shares overall responsibility with the provincial governments to ensure that these vast bodies of water, their supporting watersheds and our natural environment remain functional and healthy across Canada.

The Green Budget Coalition recommends that the Government of Canada build on the success of its Action Plan for Clean Water, to create a cohesive framework in which to support long-term watershed health, to build world class science, capacity and partnership and to address significant watershed scale issues through a major investment in a broader **Canada Water Fund**.

The Green Budget Coalition recommends that the new Water Fund invest in:

1. Long-term watershed health:

- a. Alleviating land based run-off of pollutants and nutrients through the creation of a *national, partnership-based nutrient reduction stewardship strategy, with a focus on inter-jurisdictional watersheds, with Environment Canada and the agricultural industry: A federal \$100 million annual investment for five years, matched by government and non-government partners.*
- b. Continuing implementation of the Great Lakes Water Quality Protocol by way of an emphasis on the remaining three Canadian Areas of Concern:¹²³
\$25 million per year for five years;
- c. Aquatic invasive species: *\$25 million per year for five years;*

2. Building World Class Science, Capacity and Partnership

- a. Ensuring national monitoring framework that is accessible and comprehensible.
 - Water quality and quantity monitoring framework: \$30 million per year over five years
- b. Fisheries Protection Program (FPP), over five years:
 - Monitoring and evaluation: *\$10 million per year, and*
 - Scientific research: *\$25 million per year.*

Total Recommended Investment:

Canada Water Fund: \$215 million per year for five years

¹²³ The three "remaining" Areas of Concern, those that are solely Canadian responsibility and have not yet been allocated sufficient funding to remediate them, are Toronto, Port Hope, and Thunder Bay.

Background and Rationale

While the value of our natural fresh-water systems is priceless, we continue to see troubling deterioration of this resource. Some of the key problems associated with our freshwater resources in Canada include: pollution and issues of water quality, eutrophication, invasive species, and issues of decreased water supply and quantity without a comprehensive understanding of cumulative impacts or national understanding of water resources. These result from a variety of human and non-human impacts.

This Green Budget Coalition recommendation is presented in the context of two issues of concern relevant across the country. In each case we highlight examples where those issues are being manifested and causing high impacts.

1. Long-term watershed health

1a. Alleviating land based run-off of pollutants and nutrients

There are significant impacts resulting from land based run-off of pollutants and nutrients in many waters that are under federal jurisdiction or impacted by federal decision-making and institutions. Examples of these include nutrient (both phosphorous and nitrogen) run-off with resulting eutrophication and ecosystem health impacts in Lake Erie and Lake Huron in the Great Lakes; Lake Winnipeg in Manitoba; Lake Diefenbaker in Saskatchewan; Lake St. Augustin in Quebec;¹²⁴ Lac la Biche in Alberta;¹²⁵ Tabor Lake in Northern BC;¹²⁶ lakes in the Carleton and Meteghan River watersheds in Nova Scotia and others. Other examples include other types of pollutants, such as pesticides run-off, as well as deposition of toxic contaminants in the lakes from air emissions. Many of these above areas are lakes, which are recipients of large drainage basins, with multiple jurisdictions and political boundaries in those basins.

The federal government has provided welcome resources to regionally significant fresh water resources in past years under its Action Plan for Clean Water. The January 2013 announcement of a \$29 million fund for Lake Simcoe and South-Eastern Georgian Bay¹²⁷ followed the 2007-2012 \$30 million Lake Simcoe Clean Up Fund; these funds were aimed at a range of issues that include phosphorous reduction and wildlife habitat. The federal government also provided funding in Budgets 2012 and 2013 for Lake Winnipeg through an \$18 million fund for phase II actions between 2012 and 2017, which built on the prior phase I funding of \$17.7 million for 2008 to 2012.¹²⁸

The federal role in alleviating land based run-off of pollutants and nutrients includes: implementation of the international agreements where applicable; participating in and providing leadership in inter-jurisdictional approaches to solving these problems; conducting research; gathering baseline data; monitoring; analyzing trends; exchanging information; and consulting with and reporting to the public on how these issues are being addressed.

The GBC's proposed Canadian Water Fund would analyze the areas of highest loadings of pollutants to these fresh-waters, and assist with implementation of best management practices and other strategies on the landscape to dramatically reduce these pollution volumes.¹²⁹

Recommended Investment: Initial funding of \$100 million per year for five years.

1b. Continuing implementation of the Great Lakes Water Quality Protocol

Looking forward, the Green Budget Coalition emphasizes the importance of renewing, in 2016 and 2017, the government's current funding for the Great Lakes which sunsets in March of those years, including addressing contaminated sediments in the

¹²⁴ Trophic Status Evaluation for 154 Lakes in Quebec, Canada: Monitoring and Recommendations, Rosa Galvez-Cloutier and Michelle Sanchez, *Water Qual. Res. J. Canada*, 2007 · Volume 42, No. 4, 252-268.

¹²⁵ Natural Resources Canada, 2008, The cultural eutrophication of Lac la Biche, Alberta, Canada: a paleoecological study D.W. Schindler, Alexander P. Wolfe, Rolf Vinebrooke, Angela Crowe, Jules M. Blais, Brenda Miskimmin, Rina Freed, and Bianca Perren. <http://faculty.eas.ualberta.ca/wolfe/eprints/Schindler2008CJFAS-LLB.pdf>

¹²⁶ Chlorophyll a seasonality in four shallow eutrophic lakes (northern British Columbia, Canada) and the critical roles of internal phosphorus loading and temperature, Todd D. French & Ellen L. Petticrew; *Hydrobiologia* (2007) 575:285-299. http://www.unbc.ca/assets/ellen_petticrew/french_petticrew_hydrob.pdf

¹²⁷ News Release, Harper Government Announces Funding for Lake Simcoe and South Eastern Georgian Bay Clean-Up Project <http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=9FE89EF8-835F-4DBD-9DEB-D6921ECDD0B7> January 7, 2013, page accessed July 19, 2013

¹²⁸ Environment Canada, Cleaning Up Lake Winnipeg Basin Initiative, <http://www.ec.gc.ca/eau-water/default.asp?lang=En&n=4E8DF48A-1>, page accessed October 23, 2014.

¹²⁹ CCME, June 2010, Review and Identification of Research Needs to Address Key Issues Related to Reactive Nitrogen (RN) Deposition and Eutrophication in a Canadian Context, Prepared for: Acid Rain Task Group Canadian Council of Ministers of the Environment, Prepared by Judi Krzyzanowski, Executive summary available at: http://www.ccme.ca/files/Resources/air/acid_rain/pn_1450_rn_eutrophication_smry_en.pdf

Canadian Areas of Concern, and re-funding the Great Lakes Nutrients Initiative.

The GBC also recommends investing an additional \$25 million per year in Budget 2015 for implementation of the recent Great Lakes Water Quality Protocol (GLWQP of 2012; amending earlier versions of the Great Lakes Water Quality Agreement),¹³⁰ Areas of Concern (AOCs), environmental monitoring, a climate change impact strategy, and continued investment in the Canada-Ontario Agreement (Great Lakes). While the current level of federal funding is important, Canada lags far behind on a per capita annual investment in Great Lakes protection made by the U.S., its partner in the GLWQP. To achieve greater progress in Canada under the Protocol such as more robust action on nutrients and contaminants, faster AOC delisting, setting of lake ecosystem targets and contaminant targets, and implementation, the GBC recommends increasing the current level of federal Great Lakes program funding.

Recommended Investment:

An additional **\$25 million per year for five years**

1c. Aquatic invasive species

Among the most critical of issues threatening the ecosystem of many of Canada's most significant water systems is that of aquatic invasive species.¹³¹

Introduced, invasive Asian Carp is threatening the Great Lakes from its presence in neighbouring waterways. In addition to the massive threat to the ecosystem, estimates of the threatened economic impact of these invasive species range from \$13 billion to \$35 billion. The GBC recommends that the Government of Canada invest in research, monitoring, coordination, and enhanced border protection (in addition to existing funding) to better address the threat of aquatic invasive species.

This funding should be used for the following purposes:

- **Research** – Funding to continue developing and testing other methods of catching, killing and controlling unwanted fish and other aquatic invasive species.
- **Monitoring** – Expand water sampling areas in the Great Lakes and likely invasion spots
- **Coordination** – Prioritize action on aquatic invasive species, including Asian carp, in the

Canada-Ontario Agreement. COA will likely be important in establishing the roles and responsibilities for the federal and provincial governments related to invasive species control and management in the Great Lakes.

- **Enhance border protection** – Better training and education for Canadian Border Services Agency staff to identify aquatic invasive species and to enforce existing laws and regulations.

The United States is already contributing \$200 million over four years solely on its ongoing work to keep Asian carp out of the Great Lakes.

Recommended Investment:

An additional **\$25 million per year for five years.**

2. Building World Class Science, Capacity and Partnership

2a. National Water Quality and Quantity Monitoring Framework

Ensuring long-term watershed health can only be accomplished in conjunction with a strong national freshwater monitoring framework that is both accessible and comprehensible to all sectors of society including academia, the public, and the non-governmental agencies working on freshwater issues. Without long-term monitoring systems and accessibility to freshwater science, there is no way to understand if the many compelling water strategies, plans and policies that have emerged across Canada in the last decade are making the progress we need.

Canada has no agreed upon framework for assessing or setting targets for the health of our waters, so we have no basis on which to judge if water use is sustainable. As such, we often respond to water issues in a reactive mode.

Recommended Investment:

To establish water quality and quantity monitoring framework including monitoring stations, staff training, and creating open data infrastructure to share data.¹³²

\$30 million per year over five years

See also *Strengthening Canada's Science Capacity, later in this document, and Achieving Canada's Nature Conservation Commitments – Conservation Support*, earlier in this document.

¹³⁰ For the full text see: <https://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=A1C62826-1>

¹³¹ See, for example, Environmental Defence (July 2013), *Tipping the Scales: A report about how Canada and Ontario can prevent an Asian carp invasion of the Great Lakes*, <http://environmentaldefence.ca/asiancarp>

¹³² See, for example, the Council for Canadians proposed National Water Policy, available at: <http://canadians.org/sites/default/files/publications/AFB2014-water.pdf>

2b. Federal Fisheries Protection Program (FPP)

Starting with changes introduced in Budget 2012, the Department of Fisheries and Oceans (DFO) continues with the process of implementing its new Fisheries Protection Program (FPP) through the development of a supporting regulatory framework designed to emphasize the protection of recreational, aboriginal and commercial fisheries in Canada. Some core elements of the new FPP include a self-assessment tool for project permitting proponents and habitat enhancement through the new partner/community based Recreational Fisheries Conservation Partnership Program (RFCPP).

While the design phase of the regulatory oversight component is under development, the Green Budget Coalition recommends that measures must be put in place to monitor and assess the outcomes of DFO's new programming. In this vein, resources are needed to verify that the triage and self-evaluation efforts are working, that habitat destruction offset efforts are being implemented as described, and that community-based habitat improvement projects, i.e. implemented through the RFCPP, are providing additive and lasting value by restoring lost or degraded natural fish habitats.

Recommended investment:

\$10 million per year over five years for DFO program monitoring and evaluation, and

An additional \$25 million over five years for scientific research in support of the new FPP.

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Implementing the Air Quality Management System

Recommendation Summary

Sustain funding for the Clean Air Regulatory Agenda to implement the Air Quality Management System, including completing development and implementation of the Multi-sector Air Pollutant Regulations and Canadian Ambient Air Quality Standards, as well as complementary research and monitoring initiatives.

Investment Required:

Budget 2011 announced an investment of \$252 million over two years to support regulatory activities to address climate change and air quality. A similar level of investment is now needed on an ongoing basis (\$126 million per year).

Endorsed by: Canadian Lung Association

Background and Rationale

“Over recent years, the number and severity of smog days across Canada has been on the rise. This development is completely unacceptable to our government. Poor air quality isn’t just a minor irritant to be endured. It is a serious problem that poses an increasing risk to the health and wellbeing of Canadians.”

- Prime Minister Stephen Harper, October 10, 2006¹³³

The Canadian Medical Association estimates that 21,000 Canadians died prematurely as a result of air pollution in 2008 and that the economic cost of air pollution-related illness and death in Canada topped \$8 billion. Due to demographic trends, if air quality does not improve, the annual death toll is expected to increase to nearly 45,000 by 2031.¹³⁴ In addition to adverse respiratory and cardiovascular effects, the International Agency for Research on Cancer (the specialized cancer agency of the World Health Organization) classifies outdoor air pollution as carcinogenic to humans.¹³⁵ New research also shows prenatal air pollution exposure is associated with adverse birth outcomes – and that socially disadvantaged populations are at greater risk.¹³⁶

A new Air Quality Management System for Canada

In October 2012, the federal, provincial and territorial Environment Ministers agreed to take action to improve air quality in Canada.¹³⁷ The new Air Quality Management System was developed through a collaborative process involving federal, provincial and territorial governments, as well as stakeholder groups. The federal government has a lead role to play in realizing two key pillars of the system: industrial emission reduction requirements and updated Canadian Ambient Air Quality Standards (CAAQS).¹³⁸

Industrial emission reduction requirements

In June 2014, the Ministers of Health and Environment proposed new Multi-sector Air Pollutant Regulations. Initially, these regulations target pollution reductions from three industrial sectors or equipment groups, starting in January 2015: the cement-manufacturing sector, stationary gas engines (used in the oil and gas sector to move gas through pipelines, for example), and non-utility boilers and heaters (used to create hot water or steam for industrial processes). The Air Quality

¹³³ Prime Minister of Canada, 10 October 2006, PM Announces Canada’s Clean Air Act. <http://pm.gc.ca/eng/media.asp?id=1349>

¹³⁴ Canadian Medical Association, 2008, No Breathing Room: National Illness Cost of Air Pollution. Ottawa. http://www.healthyenvironmentforkids.ca/sites/healthyenvironmentforkids.ca/files/No_Breathing_Room.pdf

¹³⁵ Dana Loomis et al., “The Carcinogenicity of Outdoor Air Pollution,” *The Lancet Oncology* 14, no. 13 (December 2013): 1262–63, doi:10.1016/S1470-2045(13)70487-X.

¹³⁶ Simone C Gray et al., “Assessing the Impact of Race, Social Factors and Air Pollution on Birth Outcomes: A Population-Based Study,” *Environmental Health* 13, no. 4 (2014), doi:10.1186/1476-069X-13-4.

¹³⁷ “AQMS,” Canadian Council of Ministers of the Environment, n.d., <http://www.ccme.ca/en/resources/air/aqms.html>

¹³⁸ Provinces are to lead complementary air zone management activities to ensure CAAQS are achieved in all areas of the country.

Management System calls for national emission reduction standards for fifteen industrial sectors.

Canadian Ambient Air Quality Standards

In May 2013, the Government of Canada established new, health-based ambient standards for fine particulate matter (PM_{2.5}) and ground-level ozone. These come into effect in 2015 and will replace the less-stringent Canada-wide standards for air quality. The new CAAQS are to be reviewed and updated for 2020. The Air Quality Management System also foresees complementary CAAQS for other pollutants, including nitrous oxides and sulphur dioxide.

Measured on a regional basis, air quality has been slowly improving in recent years in most parts of Canada.¹³⁹ Yet more than 35 percent of Canadians live in communities where levels of ground-level ozone still exceed the current Canada-wide air quality standard.¹⁴⁰ Fully implementing the Air Quality Management System would lead to further improvements, delivering health and economic benefits for Canadians. The net benefits of the proposed Multi-sector Air Pollutant Regulations for industrial engines, boilers and heaters and cement kilns are estimated to be \$6.49 billion, \$1.13 billion and \$1.44 billion, respectively. These benefits correspond to benefit-cost ratios ranging from 15:1 (for engines) to 34:1 (cement kilns).¹⁴¹

Renewal of the Clean Air Regulatory Agenda

Development and implementation of the Air Quality Management System is part of the Government of Canada's Clean Air Regulatory Agenda (CARA), along with complementary air quality initiatives including research, monitoring and the Air Quality Health Index. Budget 2011 funded the CARA for five years (the Budget announced \$252 million over two years; the total five-year investment was \$600.8 million¹⁴²). This funding will sunset in March 2016. The coming years will be crucial for finalizing emission reduction regulations for the remaining industrial sectors, developing CAAQS for other pollutants and implementing these new standards.

Early renewal of the CARA's funding in Budget 2015 would ensure continuity of the program at this critical juncture, providing the necessary certainty to complete implementation of the federally-led components of the Air Quality Management System without further delays.

Complementary Measures

The Government of Canada's Clean Air Regulatory Agenda – and broader Clean Air Agenda – includes action to address climate change, as well as air quality. Climate change can aggravate the health effects of air pollution, while reducing GHG emissions can have co-benefits for air quality. Regulated greenhouse gas (GHG) performance standards for major industrial emitters - a centrepiece of the government's climate change plan - have yet to be introduced. The Green Budget Coalition recommends that comprehensive measures to dramatically reduce Canada's GHG emissions be developed and implemented without further delay, including an effective system for "pricing" greenhouse gas emissions. For more details on the GBC's views on addressing climate change, please see the *Energy Innovation and Climate Change Leadership* section and *Carbon Pricing* recommendation, earlier in this document.

Understanding climate change vulnerabilities and developing adaptation strategies will help Canadian communities prepare for future impacts. For that reason, the GBC also supports renewed funding for the international and adaptation components of the Clean Air Agenda. (See also *Adapting and Building Resilience to Climate Change, Leadership on Global Climate Finance, and Energy Innovation*, earlier in this document, for further discussion of the *Clean Air Agenda*.)

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¹³⁹ Environment Canada, 22 August 2014, Canadian Environmental Sustainability Indicators, Air Quality. <http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=7DCC2250-1>

¹⁴⁰ Environment Canada, "Proposed Multi-Sector Air Pollutants Regulations (p. 1321)" (Canada Gazette, June 7, 2014), <http://gazette.gc.ca/rp-pr/p1/2014/2014-06-07/pdf/g1-14823.pdf>.

¹⁴¹ Ibid.

¹⁴² <http://actionplan.gc.ca/en/initiative/clean-air-regulatory-agenda>



Chemicals Management Plan

Recommendation Summary

Sustain funding to complete assessment, and management where required, of substances categorized and prioritized for action under the Chemicals Management Plan by 2020, as required by the Canadian Environmental Protection Act, 1999, including funding for research, data collection, and monitoring.

Investment Required:

\$100 million per year for five years, for Health Canada and Environment Canada

Background and Rationale

The Canadian Environmental Protection Act, 1999 (CEPA, 1999) mandated Health Canada and Environment Canada to categorize over 23,000 chemicals on the market that had never been assessed for human or environmental toxicity. The categorization exercise essentially short-listed 4,300 substances of highest concern for further detailed assessment.

The Government of Canada launched the Chemicals Management Plan (CMP) in 2006 to undertake the required assessments and management activities. The CMP was initially funded for five years (CMP1) and the government renewed funding for a second five-year phase in 2011 (CMP2). As of March 2014, Health Canada and Environment Canada had completed assessments for 1386 of the 4,300 substances identified in the categorization exercise. An additional 1,614 substances are scheduled to be assessed under CMP2 by March 2016.

A third phase (CMP3) is envisioned to complete assessment of the remaining 1,300 all substances identified through the categorization exercise. Furthermore, in many cases, development and implementation of management plans for substances found to be toxic under CEPA will not have been completed when the current CMP budget sunsets in 2016.¹⁴³

Meeting the Goal of Assessing All Toxic Substances by 2020

The federal government has set a goal of completing the assessment and development of regulatory

management options for toxic substances in Canada by 2020. This timeline flows from Canada's commitments under the 2002 World Summit on Sustainable Development Plan of Implementation.¹⁴⁴ Some substances that have yet to be assessed may be as hazardous as the subset initially identified as "high priorities for action" in CMP1 on the basis of information on use and toxicity available at the time of categorization. In many cases there was limited data on their use and toxicity. Greater use of authorities under CEPA to fill data gaps and the integration of new biomonitoring and pollution reporting data will be essential for assessment of the remaining substances.

To meet the 2020 timeline for completion and ensure the continuity of the program, planning for CMP3 must begin in 2015, including stakeholder consultation. Early renewal in Budget 2015 would provide necessary certainty in planning the third phase and improve stakeholder confidence, leading to better engagement and ultimately better outcomes.

Complementary Measures

The GBC also supports the renewal of funding for Phase 3 of the Federal Contaminated Sites Action Plan,¹⁴⁵ to complete the 15-year program up to 2020.

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¹⁴³ Health Canada, Final Report - Audit of the Implementation of the Chemicals Management Plan - Existing Substances, September 2013 http://www.hc-sc.gc.ca/ahc-asc/pubs/_audit-verif/2013-08/index-eng.php#a1

¹⁴⁴ Article 23 of the 2002 WSSD Plan of Implementation includes a commitment that, by 2020, "...chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment, using transparent science-based risk assessment procedures and science-based risk management procedures, taking into account the precautionary approach...", http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf

¹⁴⁵ <http://www.federalcontaminatedsites.gc.ca/default.asp?lang=en>



Green Infrastructure for First Nations Communities

Recommendation Summary

There are major opportunities to integrate green infrastructure thinking into the programs and policies that are needed for planning, building, updating, and repairing First Nations communities. While some progress is being made, drinking water systems in many communities are in dire need of improvement and upgrading. A co-ordinated approach that 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.

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. \$400 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**

Alternative and complementary measures address green energy and healthy housing.

Total Recommended Investment:

\$444 million per year for five years.

Background and Rationale

1. Water and Wastewater Systems

Regarding First Nations water systems, the federal government has made important steps and invested significant resources, however much still needs to be done.

In June 2013, Bill S-8, the Safe Drinking Water for First Nations Act, was passed into law in an attempt to establish enforceable drinking water and wastewater regulations on First Nations reserves.¹⁴⁶ Although improvements still need to be made,

enacting this legislation demonstrated that the Government of Canada recognized the need to prioritize the issue of safe drinking water for First Nations.

In 2014, the GBC welcomed the federal government's \$323.4 million investment over two years for First Nations water systems, after dedicating \$2.8 billion in cumulative investments since 2006.^{147, 148}

However, the number of drinking water advisories (DWAs) remains persistently high. A 2011 assessment commissioned by Aboriginal Affairs and Northern Development Canada (AANDC) found that 39% of

¹⁴⁶ <https://www.aadnc.aandc.gc.ca/eng/1330528512623/1330528554327>

¹⁴⁷ Aboriginal Affairs and Northern Development Canada, Budget 2012 Highlights – Aboriginal and Northern Investments, <http://www.aadnc.aandc.gc.ca/eng/1314815272921/1314816043432>

¹⁴⁸ Canada, Federal Budget 2014 online, <http://www.budget.gc.ca/2014/docs/bb/brief-bref-eng.html>

First Nations drinking water systems were at high risk of being unsafe.¹⁴⁹

As of 2011, over 1,700 small and rural communities and over 100 First Nations communities across Canada were under boil water advisories in any given year.¹⁵⁰ As of February 28, 2014, 92 First Nations communities were under a drinking water advisory,¹⁵¹ representing about 14% of First Nations communities.

There is thus a clear need for further major investments, along with ongoing support for AANDC's efforts to identify and implement lower-cost solutions.

Budget: \$400 million per year for five years¹⁵²

2. Energy Efficiency & Healthy Housing

Energy efficiency needs in First Nations communities require healthy housing investments since many of the necessary energy improvements require improvements in housing stock. Energy conservation programs address many of the health and comfort issues associated with poorly insulated buildings such as mould, other aspects of poor indoor air quality, and resulting health effects such as asthma.¹⁵³

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.¹⁵⁴ In Canada, 20% of Aboriginal multi-family households live with core housing needs vs. 12.4% of non-Aboriginal households. The 2006 census data

estimated that 15% of the First Nations population was living in overcrowded homes, a rate five times higher than the non-Aboriginal population.¹⁵⁵

Deep Measures Retrofits

While the need is greater, this recommendation targets deep measures retrofits (retrofits that deal with building envelope, insulation, and major appliances) 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 in larger numbers of homes annually in First Nations communities across Canada.

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.^{156, 157, 158}

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. In addition, program development and delivery by the federal government

¹⁴⁹ 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

¹⁵⁰ Water Canada, 2011, Urgent Delivery, <http://watercanada.net/2011/urgent-delivery/>

¹⁵¹ Health Canada, 2014, *First Nations and Inuit Health: Drinking water and wastewater*, online, [www.http://www.hc-sc.gc.ca/fniah-spnia/promotion/public-publique/water-eau-eng.php](http://www.hc-sc.gc.ca/fniah-spnia/promotion/public-publique/water-eau-eng.php)

¹⁵² This \$2B funding recommendation is intended, on top of previously allocated funding, to address a major portion of the approximately \$6 billion needed over ten years outlined in AANDC's report: National Assessment of First Nations Water and Wastewater Systems – National Roll-up Report, Final (April 2011). That report indicated that over the next ten years approximately \$1.2 billion was required to meet existing protocols and an additional \$4.7 billion for new servicing. Meeting existing protocols should be the initial budget priority for this new funding envelope.

¹⁵³ Canadian Environmental Law Association, 2011, "Healthy Retrofits", <http://www.cela.ca/publications/healthy-retrofits-full-report>.

¹⁵⁴ Assembly of First Nations, AFN Annual Report 2013, online, <http://www.afn.ca/index.php/en/policy-areas/housing>

¹⁵⁵ Gionet, L (2009), First Nations people: Selected findings of the 2006 Census. Canadian Social Trends, Summer 2009 (87): 54-60.

¹⁵⁶ Centre for Indigenous Resources, "Reflections on Success, A Sustainable Future in a Changing Climate", 2007, <http://www.aadnc.aandc.gc.ca/eng/1312212959922/1312213056686>

¹⁵⁷ The EANCP was renewed in Budget 2011 for 2011-16 with \$20 million (total) over five years 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>

¹⁵⁸ As of 2014, since 2007 the EANCP has provided support to 190 First Nations projects across Canada, at a maximum eligibility of \$250,000 per project (project eligibility varies).

in partnership with First Nations communities is a key requirement.¹⁵⁹

Budget:

- **2,000 homes per year across Canada at \$12,000.00 per home for deep measures retrofits: \$24 million per year for five years.**
- **80 new non-residential energy efficiency 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)

Total: \$44 million per year for five years

(Some of this funding could potentially come from the Budget 2013 allocation of \$155 million to the First Nations Infrastructure Fund.)

Alternative and Complementary Measures

Many important environmental, health, and energy security benefits can be created by such programs as ANCAP and EANCP that reduce First Nations communities' reliance on diesel fuel. For a promising Green Budget Coalition recommendation in this area, see *Sustainable Action Fund for Energy (SAFE) for Northern and Remote Communities in Sustainable Energy for Canada*, in the GBC's *Recommendations for Budget 2014*.¹⁶⁰

A March 2012 report,¹⁶¹ based on data from Aboriginal Affairs and Northern Development Canada (AANDC) and the 2006 Census, estimated that between 2010 and 2034, the incremental housing requirements of Registered Indian households on reserve will include:

- "130,197 new units to accommodate household and family growth;
- 11,855 new units to replace units which are lost to the stock or deteriorate to the point where they cannot be economically renovated; and
- the renovation of an additional 8,261 to 10,861 existing dwelling units which are forecast to require major repairs during the period."

The financial requirement to provide for the housing needs of First Nations is, for on-reserve housing, roughly \$1 billion annually for the next five years, and, for off-reserve housing, roughly \$100 million per year for five years.

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¹⁵⁹ 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>

¹⁶⁰ <http://greenbudget.ca/wp-content/uploads/2014/01/Green-Budget-Coalitions-Recommendations-for-Budget-2014-November-7-2013.pdf>, p. 34-35.

¹⁶¹ Clatworthy, Stewart (March 2012), Four Directions Project Consultants, *Aboriginal Housing Conditions and Needs on Reserves*, p. 17.

A photograph of a sunset over a field of tall grasses. The sun is a bright, glowing orb positioned centrally on the horizon, partially obscured by the dark silhouettes of the grass. The sky is a deep, warm orange, transitioning to a lighter hue near the horizon. The grasses in the foreground are dark and detailed, creating a sense of depth and texture.

Cross-Cutting Recommendations

A banner image with a background of green leaves. The text "Greening Canada's Economy" is written in a white, serif font, centered over the image.

Greening Canada's Economy

Greening Canada's economy refers to efforts to improve the overall environmental impact of economic activity in Canada, while preserving and improving the economy's role in facilitating healthy lives and prosperity for Canadians.

Canada's economy plays a critical role in facilitating healthy lives and prosperity for Canadians, but also causes a large amount of pollution and other environmental degradation and resource depletion. As such, improving the environmental impact of Canada's economy,¹⁶² often termed "greening Canada's economy," is a fundamental and necessary aspect of achieving environmental sustainability in tandem with prosperity for Canadians. In broad terms, Canada's economy can be "greened" in two ways: by reducing the environmental intensity (or negative impacts per 'unit of production') of economic activity, and by reducing the absolute level of economic activity, in both cases particularly for significantly environmentally-damaging or -risky activity such as major resource projects.

Canada's economy can be "greened" through actions by governments at all levels, as well as by businesses, civil society organizations, and individuals. However, the federal government has the greatest influence and responsibility to take action, in part to shape the regulatory and fiscal structures within which these other economic actors operate.

Fundamental federal actions needed for greening Canada's economy include:

- 1) Implementing an economy-wide 'price' on greenhouse gas emissions, via a "carbon tax" or cap-and-trade system; (See *Carbon Pricing*, earlier in this document.)
- 2) Investing to accelerate the transition to renewable, low-impact energy sources providing a much greater portion of energy consumption in Canada; (See *Energy Innovation: Strategic Opportunities*, earlier in this document.)
- 3) Strengthening environmental protection related to major natural resource projects; (See, for example, *Liability Rules for the Arctic Offshore*, *Nuclear Power*, and *Rail Freight Transportation*, later in this document, and *Sustainable Environmental Assessments of Major Natural Resource Projects*, below.)
- 4) Incorporating the value of natural capital into the economy and into government decision-making processes, including by:
 - Levelling the fiscal playing field for natural resources using subsidy and pricing reform; (See *detailed section later in this document*.)
 - Ensuring that "national capital" – the sum of natural, human, social, produced and financial capital from which countries draw their wealth – is tracked, preserved and grown, and made central to fiscal and economic policy; (See *Measuring Ecological Goods and Services*, later in this document.)
- 5) Increasing our understanding of what forms and levels of economic growth can be harmonious with sustainability (in Canada and globally) and integrating that knowledge into economic policy.

In the end, as with environmental sustainability, for Canada's economy to be "green" on an enduring basis will require the achievement of a global green economy in partnership with countries, companies, organizations and individuals around the world.

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¹⁶² Improving environmental impacts can entail reducing environmentally-damaging activities and increasing environmentally-restorative activities, such as wetlands restoration, energy efficiency measures, and renewable energy development.



Sustainable Environmental Assessments of Major Natural Resource Projects

Environmental assessments are crucial to ensuring that the development of major natural resource projects subject to the *Canadian Environmental Assessment Act* 2012 is sustainable.

Budget 2012 provided \$81 million over three years for the Major Projects Management Office (MPMO) Initiative. This is an interdepartmental initiative across 12 departments to enable efficient and effective regulatory reviews of major resource development projects. Key outcomes included: high-quality assessments of the environmental and social effects of resource development; and fulfillment of aboriginal consultation responsibilities.

The Canadian Environmental Assessment Agency receives \$14.8 million annually from the MPMO Initiative, which represents 45 per cent of the Agency's total budget. Of this amount, \$8 million is to assess the environmental effects of major resource projects, and \$6.8 million is for aboriginal consultation in relation to these projects. The Agency has responsibility for assessing almost all major projects other than pipelines and nuclear facilities and plays a leading role in consulting aboriginal people on behalf of the Crown with respect to those projects. Other departments received funding to

enable efficient and effective regulatory reviews, including Fisheries and Oceans (\$7 million), Natural Resources (\$4.2 million), Transport (\$3.5 million), Environment Canada (\$2.5 million) and Aboriginal Affairs and Northern Development Canada (\$1.8 million).

The MPMO Initiative is slated for sunseting effective March 31, 2015. The Green Budget Coalition believes that this funding remains critically important to ensuring that major development projects are environmentally and socially sustainable, and that federal constitutional responsibilities to ensure that aboriginal people are consulted and accommodated with respect to these projects are met.

Recommendation Summary:

The Green Budget Coalition recommends that **funding for the Major Projects Management Office (MPMO) Initiative be renewed at the same level of \$27 million per year for five more years, from 2015-2020.**

Levelling the “Fiscal Playing Field” for Natural Resources: Using subsidy reform and environmental pricing

Levelling the “fiscal playing field” for natural resources entails utilizing subsidy reform and environmental pricing reform to achieve three primary objectives:

1) Firstly, to ensure that governments’ fiscal treatment of the exploration, depletion, conservation and recycling of different natural resources is equitable (including consideration of market value, scarcity, and environmental and human health impacts), or else favours resources and processes whose life-cycle impacts are the most positive;

2) Secondly, to ensure that Canadians are fairly compensated for any depletion of non-renewable natural resources through royalties or other fiscal tools. While royalties are primarily provincial jurisdiction, they have been implemented in such a weak way for mining, based on calculated profits rather than actual resource value, that mining companies often pay little or no royalties at all; and

3) Thirdly, to ensure that market prices for goods and services “tell the environmental truth” by accurately reflecting true values – today and in the future – as well as the full life-cycle costs and benefits – financial, environmental, and social – associated with their development, production, transportation, sale, use and disposal.

Adherence to the “polluter pays” principle¹⁶³ is central to these strategies of subsidy reform and environmental pricing reform. The GBC was pleased that the Government of Canada proposed to incorporate the polluter-pay system into legislation as part of Bill C-22, the *Energy Safety and Security Act*,¹⁶⁴ and encourages the government to apply the polluter pays legislation consistently across all relevant legislation and contexts, including Bill C-22.

Subsidy Reform

An early step in levelling the “fiscal playing field” should be 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, 2012 and 2013 through a series of commitments addressing the oil sands and mining, and supporting tax neutrality and responsible resource development.¹⁶⁵

This document outlines the most important next steps in ending such counterproductive subsidies, starting by not adding new subsidies, regarding tax subsidies in *Subsidy Reform in the Extractive Industries*, and regarding off-book accident liabilities in *Liability Rules in the Arctic Offshore, Nuclear Power, and Rail Freight Transportation*.

Ensuring Prices “Tell the Environmental Truth” through Environmental Pricing Reform

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.”¹⁶⁶

The Green Budget Coalition firmly believes that Canada’s economy will only maximize benefits for Canadians and be truly sustainable when market prices for goods and services do tell the environmental truth by accurately reflecting true values – today and in the future – as well as the full life-cycle costs and benefits – financial, environmental, and social – associated with their development, production, transportation, sale, use and disposal.

¹⁶³ See footnote in *Executive Summary*.

¹⁶⁴ <http://www.parl.gc.ca/LegisInfo/BillDetails.aspx?Language=E&Mode=1&billId=6392558>

¹⁶⁵ See *Subsidy Reform in the Extractive Industries*, earlier in this document, for more details.

¹⁶⁶ October 30 2006, Press note: *Publication of the Stern Review on the Economics of Climate change*.

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. By making prices better reflect true values and full costs, they create financial incentives to preserve natural resources for higher value uses and to drive innovation, and rewards those already striving to make more efficient use of resources. These are important steps to developing healthier, more sustainable economies. 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.

In addition, the scale of government investment required for sustainability can often be significantly reduced by implementing such subsidy reform and environmental pricing reform measures. For example, the costs of accelerating energy efficiency and renewable energy can be reduced by implementing a carbon price, while removing the government’s existing tax subsidies and off-book liabilities for fossil fuels, mining and nuclear power will make private investments in renewable energy and energy conservation more attractive. Transit operating revenues and efficiencies can be significantly improved 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, for industry and residents, to better cover the costs of the related infrastructure.

Canada lags behind most other industrialized countries — including the United States and Australia — in utilizing market-based instruments, particularly financial disincentives, to help achieve environmental objectives. However, the GBC

has commended the Government of Canada 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.¹⁶⁷

The most important environmental pricing actions available to the federal government are: (1) Implementing a levy on greenhouse gas emissions, i.e., a “carbon price”, that will be transparent, well-designed, economy-wide and sufficient to drive GHG emission reductions; (see *Carbon Pricing*, earlier in this document, and *Carbon Pricing recommendations in previous years’ GBC Recommendations documents – via http://greenbudget.ca/main_e.html*); (2) Implementing the “polluter pays principle” throughout Bill C-22 and extending it to rail freight transportation; (See *Liability Rules for the Arctic Offshore, Nuclear Power and Rail Freight Transportation*, later in this document); and (3) Developing and implementing a comprehensive environmental pricing plan, in coordination with provincial, territorial and municipal governments, while making some federal financial transfers to provincial and municipal governments conditional on implementing such true-cost pricing measures (such as for road use).

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¹⁶⁷ See Green Budget Coalition, 2007, *2007 Federal Budget – Analysis of Environmental Measures*, http://greenbudget.ca/wp-content/uploads/2014/01/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>

Liability Rules for the Arctic Offshore, Nuclear Power, and Rail Freight Transportation

Recommendation Summary

The current design of Canada's liability rules for Arctic offshore oil operations, nuclear power and rail freight transportation leaves governments, taxpayers, communities and the environment vulnerable in the event of a significant accident or spill. The Green Budget Coalition believes that, in line with the government's commitment to the polluter pays principle, liability should be commensurate with the entire potential costs of a catastrophic accident.

While omnibus Bill C-22, the *Energy Safety and Security Act*, makes some laudable revisions to the liability obligations of the oil, gas and nuclear industries in the event of an accident, it still transfers much of the financial risks from these industries onto the federal taxpayer, and provides no justification for its inconsistent application of the "polluter pays" principle between the petroleum and nuclear industries.

In this recommendation, the Green Budget Coalition outlines key actions the government needs to take to ensure that the polluter-pays principle is applied consistently throughout Bill C-22 and also extended to rail freight transportation, to improve safety practises and thus reduce the likelihood of highly-damaging events, and to fully protect taxpayers.

Financial Savings

In the case of an oil spill, nuclear or rail freight accident, the federal government could be left responsible for damages and clean-up costs in the billions of dollars due to current 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, nuclear power and rail freight 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 these offshore, nuclear power, and rail freight industries.

The federal government has made progress over recent years in protecting taxpayers and applying the "polluter pays" principle,¹⁶⁸ including: in 2011, by privatizing Atomic Energy of Canada Limited while committing to no additional direct or indirect subsidies for reactor projects; in June 2013, by announcing it would raise the absolute liability cap for offshore drilling, including in the Arctic and for reactor operators, to \$1 billion; and most recently in 2014 by introducing Bill C-22, the *Energy Safety and Security Act*¹⁶⁹ which proposes to enshrine the polluter pays principle into law, as promised in the 2013 Speech from the Throne, and make a number of changes to liability rules for the Arctic offshore and nuclear power.

¹⁶⁸ See footnote in the *Executive Summary*.

¹⁶⁹ <http://www.parl.gc.ca/LegisInfo/BillDetails.aspx?Language=E&Mode=1&billId=6392558>

This recommendation highlights key progress in Bill C 22 along with how, to consistently apply the polluter pays principle, Bill C-22 needs to be strengthened and other measures enacted to extend it to the rail freight transportation industry.

Arctic Offshore Liability

The liability regime for drilling operations conducted in Canada's Arctic is established pursuant to 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 post-spill compensation, but also because of how it creates an incentive for oil companies to pursue excessively risky activities, knowing they will only bear the full cost of liability (beyond the absolute liability cap) if negligence is established and upheld in court. Eliminating 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.

The government introduced amending legislation in connection with Canada's existing offshore liability regime, entitled the *Energy Safety and Security Act* (Bill C-22), on January 30, 2014. In the context of an oil spill from an offshore drilling project, the liability regime determines who is responsible for paying for which damages and spill response costs, and pursuant to what specific rules. Currently, the government, and thus taxpayers, is exposed to the financial downside of a catastrophic offshore oil spill by a weak liability regime that caps operator absolute liability at \$40 million.

In Bill C-22 the government introduced a modest set of legislative amendments, including an increase in the absolute liability limit. However, the proposed legislation sets absolute liability at a level well below the anticipated financial costs of catastrophic spill response and damages.

A series of significant and highly-publicized oil spills, including the BP Deepwater Horizon spill in the Gulf of Mexico, have highlighted the inadequacy of Canada's liability regime. The damages in the BP spill alone are currently estimated at \$42 billion.

Many industry observers adopt the position that, in accordance with the polluter pays principle, operators should face unlimited absolute financial liability for oil spills, as is the case in some other jurisdictions including Norway and Greenland. They argue that unlimited absolute liability will yield twin benefits:

- a) The appropriate allocation of risk will incent industry to improve safety practices, reducing the likelihood of polluting accidents, and
- b) It will ensure that taxpayers are entirely protected from the financial consequences of an offshore oil spill.

Bill C-22 represents a positive step forward and the government's efforts to better protect the public purse and encourage less risky behaviour by offshore operators must be acknowledged. However, Bill C-22 also includes several fundamental weaknesses which compromise its effectiveness in terms of improving safety practices and protecting Canadian taxpayers in the event of a catastrophic spill:

1. \$1 billion in absolute liability is too low to cover the costs associated with catastrophic spills like the BP Deepwater Horizon, especially in the Arctic where environmental conditions would frustrate spill response efforts;
2. The bill provides for ministerial discretion to reduce absolute liability levels to below the legislated level of \$1 billion;
3. The bill provides relief from liability, in certain cases, for the effects of dumping toxic spill treating agents (chemical dispersants) into marine environments;
4. The bill does not require an operator to provide proof that it has the financial resources to pay for the entire amount of at-fault liability;

The absolute liability limit under COGOA and the AWPPA should be eliminated. In the same vein, the GBC also recommends the elimination of the 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

Bill C-22 includes a new version of the *Nuclear Liability and Compensation Act* (NLCA) that has been significantly amended since the last time it was proposed for Parliamentary debate in 2010. While Bill C-22 makes it clear that the objective of the proposed revisions for the oil and gas sector is to “ensure accountability in accordance with the ‘polluter pays’”, the proposed NLCA makes no mention of the polluter pays principle. Indeed, this new NLCA strengthens the liability protection given to nuclear suppliers in contravention of the polluter-pays principle. This should be corrected before the legislation is passed.

The NLCA contains two significant flaws: it caps the liability of reactor operators to \$1 billion and completely shields reactor suppliers and vendors from liability even if their negligence causes an accident causing offsite harm. In contrast, the liability of oil and gas operators is unlimited above the \$1 billion in absolute liability required under Bill C-22. Bill C-22 also exposes the suppliers of offshore oil and gas facilities to liability.

The government has provided no justification for why the nuclear industry is not being subjected to the polluter pays principle in C-22.

Internationally, however, there has been a move to modernize nuclear liability legislation and to remove caps on reactor operator liability. The International Atomic Energy Agency (IAEA) has acknowledged unlimited operator liability as an international best practice.¹⁷⁰ Sweden, Switzerland, Germany and Finland have established unlimited operator liability in their domestic legislation.

In Canada, the Joint Review Panel that assessed the environmental impacts of building new reactors at the Darlington nuclear site effectively recommended in 2011 following the Fukushima disaster that the federal government remove the cap on reactor liability. It 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. The Panel stated:

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.¹⁷¹

Regarding the liability of reactor suppliers, India passed new nuclear liability legislation in 2010 that 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. Japanese, Russian and French reactor vendors have since stated they will accept the liability obligations.¹⁷²

The Green Budget Coalition recommends the following amendments to the NLCA contained in Bill C-22.

Firstly, the objectives section of the *Act* should be consistent with the wording in the oil and gas section and state that the “purpose is to ensure accountability in accordance with the “polluter pays” principle in case of a nuclear incident.”

Secondly, the NLCA should be amended so that reactor operators have unlimited liability above the \$1 billion in absolute liability like oil and gas operators.

Thirdly, clause 13, which completely shields reactor suppliers from liability, should be amended so that suppliers can be held accountable if negligent.

¹⁷⁰ IAEA Action Plan on Nuclear Safety – Nuclear Liability, 2012, <http://ola.iaea.org/OLA/documents/ActionPlan.pdf>

¹⁷¹ 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.

¹⁷² See: Subhomoy Bhattacharjee, “Japan wants slice of nuclear pie, warms up to liability law,” *The Indian Express*, June 12, 2014; “Russia agrees on India’s nuclear liability law,” *Indian Express*, June 10, 2014; Sanjay Jog, “Talks on Jaitapur nuclear plant to resume soon: French government to abide by India’s civil nuclear liability law,” *The Business Standard*, July 14, 2014.

Rail Freight Transportation Liability

The Green Budget Coalition also advocates that the federal government implement polluter pays principles in respect of liability to third parties for railway freight accidents. Rail shipments may contain materials that are hazardous to the environment and to human health, such as flammable crude, chlorine or caustic fertilizer. For third party rail freight liability, the Green Budget Coalition recommends that there be a minimum regulatory financial requirement for third party liability insurance coverage carried by railway operators. Under the *Canada Transportation Act*, Canadian railways are required to purchase “adequate” third-party liability coverage in order to get a Certificate of Fitness that permits it to operate, and this is determined case by case. This contrasts with oil and gas legislation such as the *Canada Oil and Gas Operations Act*, *Canada-Newfoundland Atlantic Accord Implementation Act*, and *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act*, where, once Bill C-22 passes, in order to get authorization for work or activities relating to drilling and production of oil, gas, and petroleum, the applicant needs a proof of financial resources with a minimum requirement of \$1 billion.

We recommend that the federal railway system have a minimum requirement for the third party liability insurance coverage on a par with the requirement in oil and gas industry, to be carried by railway operators, regardless of their size. With respect to the issue of ability to obtain that coverage, we recommend consideration of pooled liability as noted in the House of Commons Transport Committee’s June 2014 Interim Report on Rail Safety Review which cited evidence that in order to meet the minimum requirement of third-party liability coverage, small railways with less capacity could pool their fund together for a pooled liability insurance.¹⁷³

In addition to railway operator liability, the Green Budget Coalition recommends that shippers should share liability for railway accidents caused by their dangerous products. Under the *Canada Transportation Act*, railway companies are wholly liable for any accident, mishap, damage, or loss in the “operation of railway,” whether or not the damage

or loss is the fault of the railway companies. It is permissible for shippers to hold partial liability, but there is currently no incentive for shippers to enter into an agreement with railway operators to share liability; in fact during the Transport Committee’s recent review, shippers actively resisted this suggestion. However, in comparison to the oil and gas industry liabilities under the proposed Bill C-22, under the *Canada Oil and Gas Operations Act*, *Canada-Newfoundland Atlantic Accord Implementation Act*, and *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act*, the person who is required to obtain an authorization for the work or activity from which the spill or debris is originated would be liable without proof of fault or negligence up to \$1 billion and beyond that if proven at fault or negligent. But in addition, other persons whose fault or negligence leads to an accident would also be liable in oil and gas industry. In the case of railway freight liability, because railway shippers are in control of the product they are shipping, and railway operators are obligated to take their shipments even if they are hazardous, we recommend that the federal government implement legislation holding shippers to be strictly liable if their goods cause harm to third parties, up to a specified amount such as the oil and gas mandatory limits of \$1 billion; and to be further liable for full damages if they are found to be at fault or negligent. This would be additional to the minimum insurance requirements that we have also recommended railway operators be required to carry.

Contacts

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Rail Freight Transportation Liability

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¹⁷³ http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=6669729&Language=E&Mode=1&Parl=41&Ses=2&File=57#_edn80



Strengthening Canada's Science Capacity

Recommendation Summary

Making science and science capacity a priority is fundamental to the Government of Canada's ability to advance Canadians' economic prosperity, health, and quality of life, by understanding the underlying building blocks of the ecosystems and natural resources on which they depend. Adequate science must remain the basis for informed decision-making in addition to effectively supporting the Government of Canada's statutory obligations. Knowledge generated through peer-reviewed science is a vital element that will enable Canada to lead the international community in climate change related initiatives and to develop and implement a highly effective National Conservation Plan.

To ensure Canada is poised to fulfill these critical roles effectively, the Green Budget Coalition recommends that Budget 2015 re-commit the Government of Canada to science-based decision-making through a number of initiatives including:

- Maintaining all current federal investment in environmental science capacity;
- Allocating new funds to support the development, implementation and monitoring of measures under the National Conservation Plan (See *Achieving Canada's Nature Conservation Commitments*);
- Increasing investment in science for fisheries to support recent changes to fisheries management in Canada (See *Achieving Canada's Nature Conservation Commitments – Healthy Ocean, Healthy Communities*); and
- Creating more opportunities to partner with industry and environmental non-governmental organizations on joint-venture science initiatives that effectively increase our collective knowledge in a coordinated manner.
- Maintaining a strong commitment to Canada's science obligations through the North American Waterfowl Management Plan – in partnership with the United States Fish and Wildlife Service (USFWS). In particular, strong support for continental migratory bird surveys which are a part of Canada's obligations under the *Migratory Birds Convention Act* (1994).

Recommended Investment: *See referenced recommendations*

Background and Rationale

Maintaining a healthy environment is a top-rated value for Canadians. Federal science capacity plays a critical role in ensuring that we have adequate information to guide decision-making on environmental protection for Canadians.

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;
- New and amended legislation and regulation have adequate science to support decision-making;
- Canada continues to meet its obligations under international environmental agreements;
- We continue to conserve our natural capital, including 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, federal deficit-reduction measures announced and implemented between 2011 and 2013 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 expenditure-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.

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Measuring Ecological Goods and Services

Recommendation Summary

Understanding the importance of good environmental information to developing effective policy and successful new technologies, the Green Budget Coalition recommends that Budget 2015 allocate seed funding for creating a second phase of the Measuring Ecosystems Goods and Services (MEGS) project to support inter-departmental research to track the “stocks” and changes in the ecosystems and ecological goods and services that are fundamental to Canadians’ health, economy and natural heritage.

Recommended Investment: \$4.5 million (total) for three years of incremental funding

Background and Rationale

Quality information is pivotal for understanding and protecting our environment, for developing the best environmental policy, and also for devising promising new technologies.

Statistics Canada reports that, “after extensive consultations, the agency has established a framework that will allow it to develop environmental statistics using much the same approach that has long been applied to economic and social statistics.”¹⁷⁴

“Underpinning the exercise is the concept of natural capital. In simple terms, natural capital views the environment as a collection of assets that provide environmental goods and services. Clean air and fresh water are good examples.”¹⁷⁵

Using wetlands as an example, measuring the economic values generated by the ecosystem services (flood attenuation, tourism, nutrient retention) of this natural cover would enable Canadians to possess a more accurate measure of the services/decreased expenditures required to remedy flood damage and declining water quality.

The interdepartmental project on Measuring Ecosystems Goods and Services (MEGS) was coordinated by Statistics Canada and concluded with the release of some of its findings in the 2013 *Human Activity and the Environment*.¹⁷⁶ This

two-year project propelled research on ecosystem accounting and the quantification of ecosystem goods and services (EGS). Participating departments included Environment Canada, Fisheries and Oceans Canada, Natural Resources Canada, Parks Canada, Agriculture and Agri-Food Canada and Policy Horizons Canada.

One result of the MEGS project was Statistics Canada’s decision to invest in developing annual land cover and land use change statistics and renewable water estimates. Both reports are slated to be available in 2015-16 and should provide important base data for researchers and federal departments working in the area of EGS research and eventually help to integrate environmental considerations into economic and policy decision-making, a priority in the Federal Sustainable Development Strategy.

There are indications that interest in further EGS measurement research remains high both within and outside the federal government. Members of the MEGS Working Committee have continued to meet on a quarterly basis to share experiences and provide feedback on interdepartmental work. Membership has been expanded to welcome other departments (e.g., Industry Canada) and initiatives (e.g., Inter-governmental Panel on Biodiversity and Ecosystem Services, IPBES). As such, the GBC expects that additional resources for indentifying and quantifying EGS could facilitate benefits across the federal government.

¹⁷⁴ Statistics Canada, “Framing the Environment”, 17 April 2013 (blog), <http://www.statcan.gc.ca/eng/node/45>

¹⁷⁵ Ibid.

¹⁷⁶ Statistics Canada, 2013, *Human Activity and the Environment*, <http://www.statcan.gc.ca/pub/16-201-x/16-201-x2013000-eng.htm>

Internationally, the United Nations has developed and finalized the System of Environmental-Economic Accounting (SEEA), a set of statistical standards that link environmental data to the economic data in the System of National Accounts. Statistics Canada is helping to develop additional experimental guidelines within the SEEA that focus on ecosystem accounts and the measurement of EGS. These guidelines are compatible with the techniques developed through MEGS, with Statistics Canada becoming one of the lead national statistical organizations to test these concepts. Also, the World Bank's Wealth Accounting and the Valuation of Ecosystem Services (WAVES)¹⁷⁷ is advancing efforts so that natural resources are mainstreamed in development planning and national economic accounts, and the Economics of Ecosystems and Biodiversity (TEEB)¹⁷⁸ is advancing the tracking of the economic benefits of biodiversity.

Recommendation details

Of the total \$4.5 million for incremental seed funding to advance development of a system of ecosystem accounting for Canada, the GBC recommends \$2.4 million be directed to Statistics Canada to support their leadership and coordinating role, and \$2.1 million to support the participation of the relevant policy departments.

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¹⁷⁷ <http://www.wavespartnership.org>

¹⁷⁸ <http://www.teebweb.org/>

Summary Table

Lead Departments and Costs (and Savings) Associated with the GBC's Recommendations for Budget 2015
(in millions of dollars; negative figures represent savings or revenues)

Recommendation Sub-Recommendation	Likely Lead Department(s)	Notes on Costs/Savings	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	ongoing
Energy and Climate									
ENERGY INNOVATION AND CLIMATE CHANGE LEADERSHIP									
Subsidy Reform in the Extractive Industries									
No new subsidies, especially for LNG	Finance, NRCan	Savings dependent on level of new tax subsidies being proposed.					?	?	?
Canadian Exploration Expense	Finance, NRCan	Estimates based on past years.	-240	-240	-240	-240	-240	-240	-240
Mineral Exploration Tax Credit	Finance, NRCan		-60	-45	-45	-45	-45	-45	-45
Carbon Pricing									
	EC	Revenues dependent 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	-18,000 to -50,000
Energy Innovation: Strategic Opportunities									
Electric vehicle fast-charging stations	NRCan, TC		12						
Energy storage - accelerated capital cost allowance	Finance, NRCan	Rough estimate	2	5	10	10	5	2	2
Leadership on Global Climate Finance									
Climate Change Adaptation and Resilience									
Clean Air Agenda's Adaptation theme	AANDC, NRCan, EC, HC	Renewal/expansion		45	45	45	45	45	
Integrating adaptation into all infrastructure	Infrc	Negligible	-	-	-	-	-	-	-
Cost Savings for Canadians via Energy Efficiency									
Home retrofits for low-income Canadians	NRCan		250	250	250	250	250		
EcoENERGY - to develop national home retrofit plan	NRCan	Renewal/expansion	10	55	60	65	70	75	
TOTALS - Energy and Climate			Savings dependent on carbon price level.	-17,000 to -50,000	-17,000 to -50,000	-17,000 to -50,000	-17,000 to -50,000	-17,000 to -50,000	-17,000 to -50,000
Nature Conservation									
ACHIEVING CANADA'S NATURE CONSERVATION COMMITMENTS									
<i>Protecting Canada's Public Lands and Waters</i>									
National Parks									
Establishment	PC		70	20	20	20	20	20	20
Conservation science & monitoring capacity	PC		20	20	20	20	20	20	20
National Wildlife Areas									
Creating and managing new NWAs	EC		5	5	5	5	5	5	5
Protecting existing NWAs and MBSS	EC		35	35	35	35	35	35	35
<i>Conservation Science Support</i>									
Species at Risk	EC, DFO, PC, NRCan		20	20	20	20	20	20	20
<i>Economic Opportunities of Healthy Oceans</i>									
Protecting Ocean Habitat	PC, DFO, EC		45	45	45	45	45	45	45
Managing ocean development	DFO		10	10	10				
Transforming fisheries	DFO								
For existing fisheries conservation policies, laws	DFO		3	3	3				
Rebuilding fisheries	DFO		2.5	2.5	2.5				
Fisheries associations, for co-management plans	DFO		1.7	1.7	1.7				
Conserving migratory birds	EC		30	30	30	30	30	30	30
Canadian Wetland Inventory	EC		10	10	10	10	10		
TOTALS - Nature Conservation			292.2	242.2	242.2	225	225	155	155
Healthy Communities									
Environmental Health Equity									
Indoor Air: Radon Remediation as Tax Deductible Expense	HC, EC		15	15	15	15	15	15	15
Canada's Fresh Water									
<i>Long-term watershed health</i>									
Alleviating land-based run-off - pollutants/nutrients	Agr, EC		100	100	100	100	100		
Great Lakes Water Quality Protocol, 3 AOCs	EC, DFATD		25	25	25	25	25		
Aquatic invasive species	DFO		25	25	25	25	25		
<i>World Class Science, Capacity & Partnership</i>									
Water quality & quantity monitoring framework	EC		30	30	30	30	30		
Fisheries Protection Program (FPP)									
Monitoring and evaluation	DFO		10	10	10	10	10		
Scientific research	DFO		25	25	25	25	25		
Air Quality Management System & the CARA									
Chemicals Management Plan	EC, HC			126	126	126	126	126	126
Green Infrastructure in First Nations Communities									
Water & wastewater systems	AANDC		400	400	400	400	400		
Residential energy conservation	AANDC		24	24	24	24	24		
Non-residential energy efficiency	AANDC		20	20	20	20	20		
TOTALS - Healthy Communities			674	900	900	900	900	241	141
Cross-Cutting Recommendations									
Greening Canada's Economy									
Sustainable environmental assessments (MPMO)	CEAA, EC, NRCan		27	27	27	27	27		
Liability Rules - Arctic Offshore, Nuclear Power & Rail Freight									
Arctic offshore	NRCan	Could reduce taxpayer liabilities by billions of dollars.	n/a	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	n/a
Rail freight transportation	NRCan		n/a	n/a	n/a	n/a	n/a	n/a	n/a
Strengthening Canada's Science Capacity									
Measuring Ecological Goods and Services	AANDC, DFO, EC, NRCan, PC --	Costs incorporated in referenced recommendations	1.4	1.5	1.6				
TOTALS - Cross-cutting Recommendations			28.4	28.5	28.6	27	27	0	0

Departmental Acronyms:

AANDC: Aboriginal Affairs and Northern Development Canada
 Agr: Agriculture and Agri-Food Canada
 CEAA: Canadian Environmental Assessment Agency
 DFATD: Foreign Affairs, Trade and Development Canada
 DFO: Fisheries and Oceans Canada
 EC: Environment Canada
 Finance: Finance Canada

HC: Health Canada
 IC: Industry Canada
 Infrc: Infrastructure Canada
 NRCan: Natural Resources Canada
 PC: Parks Canada
 PS: Public Safety
 StatCan: Statistics Canada
 TC: Transport Canada



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