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Executive Summary

The Council of Canadian Academies (the Council) is an independent, not-for-profit organization that supports evidence-based assessments conducted by multi-disciplinary expert panels. Expert panel members are volunteers from across Canada and internationally who serve without remuneration. The assessment process followed by the Council includes pre-approval of questions by federal departments and then a five phase assessment process resulting in a report that documents and supports the evidence of what is known and what is not known on a given subject.

As part of its Funding Agreement with the federal government, the Council is required to conduct an external evaluation according to external evaluation criteria set out by the Treasury Board Secretariat (TBS). These criteria include addressing the Council’s performance in relation to five core issues: 1) Continued Need for the Program; 2) Alignment with Government Priorities; 3) Alignment with Federal Roles and Responsibilities; 4) Achievement of Expected Outcomes; and 5) Demonstration of Efficiency and Economy. In early 2013, the Council’s Board of Governors assembled an external evaluation panel to undertake this endeavour.

The Panel’s findings in relation to the five core issues are summarized below.

Core Issue #1: Continued Need for the Program

Based on the evidence reviewed and comments by those who have engaged the services of the Council, the Panel determined that there is no readily available alternative to the work performed by the Council.

Given that the work of the Council is demand-driven, the Panel reviewed data related to the demand for the Council’s work. This data has demonstrated that the demand for Council assessments has clearly increased year over year since the organization was established in 2006. More specifically, over the last three years, demand increased by 85 per cent over the first four years of the Council’s operations. In addition, the Panel considered the profiles of assessment sponsors and found that the diversity of sponsors also increased since the Council’s inception. This suggested that, after starting from a narrow base, a broader constituency is now seeking evidence-based assessments from the Council.
Given the methodological approach used by the Council and the neutrality and credibility of its assessments, the Panel concluded that the Council offers policy-makers and the public an essential perspective through its deliberate and rigorous methodology. The Internet has fuelled the growth of short-termism. This has been compounded by the 24/7 news cycle. As a result, complex issues often receive simple and at times unsubstantiated responses. This context reinforces the need for the services provided by the Council.

Core Issue #2: Alignment with Government Priorities

Given the cumulative participation of numerous parties in developing, shaping and approving an assessment question, the Panel has concluded that the work of the Council is in line with government priorities both at the political and public service levels.

Core Issue #3: Alignment with Federal Roles and Responsibilities

The process by which the federal government approves questions for assessment signals that there is alignment between federal priorities and the work of the Council. As well, having considered the alignment between Council assessment topics and federal government roles and responsibilities, the Panel concluded that all assessments are indeed within the ambit of the federal government.

Core Issue #4: Achievement of Expected Outcomes

The Panel concluded that the Council has had substantial impact on a number of policy and program areas, and given its rigorous, methodological approach, will continue to have impact beneficial to the government of Canada, opinion leaders, and Canadian society.

The Panel further concluded, based on many examples identified, that certain policies would not have occurred without the Council assessments. Moreover, given its impact with opinion leaders and civil society, the Council has planted seeds that will have future policy and program impacts.

Core Issue #5: Demonstration of Efficiency and Economy

The evidence demonstrated that the Council functions in an efficient and effective manner. Further to that, the Panel noted the additional financial benefits realized through the value of the
volunteers’ expertise and time. From this evidence, the Panel concluded that the Council operates efficiently and economically.

Conclusions

After reviewing multiple lines of evidence and consulting several stakeholders from various points of interest, the Panel concluded that the Council of Canadian Academies has successfully delivered on the five core issues identified by the Treasury Board Guidelines.
Chapter 1: Introduction

The Council of Canadian Academies (the Council) is an independent, not-for-profit organization that undertakes evidence-based assessments conducted by multi-disciplinary expert panels. Expert panel members are volunteers from Canada and abroad who serve without remuneration. The Council is comprised of a Board of Governors, a Scientific Advisory Committee and a small Secretariat. Its founding members include the Royal Society of Canada, the Canadian Academy of Engineering and the Canadian Academy of Health Sciences. Further information about the Council can be found in Appendix III.

In the eight years since it began its mandate, the Council has completed 16 assessments within its Funding Agreement with the Government of Canada. These assessments looked at a broad range of issues from the state of science and technology in Canada to the use of integrated testing strategies for the regulatory risk assessment of pesticides. The Council is currently working on 13 assessments.

The Council developed an assessment methodology which is the process followed in the completion of its assessments. Each assessment begins with an in-depth approval process whereby a federal government committee reviews an assessment proposal prior to it being submitted to the Council as an assessment question. Once a question has been accepted, the process follows five phases:

Phase 1: Planning – An expert panel is struck. These panels are multidisciplinary in nature and usually include at least one member from outside Canada;

Phase 2: Content Development and Report Review – The report is drafted and submitted to independent peer review;

Phase 3: Report Publication – The report is edited and translated so that it is accessible in both official languages;

Phase 4: Report Dissemination – The report is made available to the public both electronically and in hard copy; and

Phase 5: Project Close-out – The Council reviews all aspects of the assessment to consider and document lessons learned.
This methodological approach ensures rigour and independence in the conduct of Council assessments. Of the various elements of the Council’s methodology, there are three the panel would like to note which differentiate Council reports from others.

1) Council reports are not policy prescriptive (i.e., do not provide recommendations, just a presentation of the evidence of what is known and what is not known on a given subject) and all assessment questions are considered in an independent, neutral environment.

2) The Council methodology outlines the way in which relationships with assessment sponsors are conducted in order to ensure the independence of the expert panel. Sponsor involvement in an assessment is limited to the beginning, in terms of crystalizing the question to be undertaken by the expert panel. Following this initial meeting, there are no further communications between the expert panel and the sponsor. This allows the expert panel to operate in an autonomous environment.

3) The Council methodology also outlines the peer review process to be followed for every assessment, which is overseen by the Council’s Board of Governors. An independent, anonymous peer review panel is engaged to review the expert panel’s report. During their final meeting which is overseen by a Report Review Monitor appointed by the Council’s Board of Governors, the expert panel is required to consider all comments submitted by the external reviewers.

As part of the Funding Agreement with the federal government, the Council is required to conduct an external evaluation according to Treasury Board Secretariat (TBS) guidelines.¹

The evaluation must address the five core issues for program evaluation:

- Issue 1: Continued Need for Program
- Issue 2: Alignment with Government Priorities
- Issue 3: Alignment with Federal Roles and Responsibilities
- Issue 4: Achievement of Expected Outcomes
- Issue 5: Demonstration of Efficiency and Economy

To undertake this endeavour, the Council’s Board of Governors assembled an independent external evaluation panel whose membership included:

The Panel received support from an independent research evaluation consultant, Jennifer Wright of JaiTec Solutions, in the completion of this report.

In order to discharge its duties with the utmost due diligence, the Panel reviewed various forms of evidence so as to fully evaluate the Council’s performance in the eight years it has been in operation. This evidence included previous evaluation reports, corporate reports, annual reports, assessments reports, as well as various pieces of qualitative data requested by the Panel. Moreover, in order to gain a complete understanding of how the work of the Council is viewed by those who would use it, the Panel also consulted several stakeholders including government officials, members of the policy community and opinion leaders.

The following table provides the list of stakeholders who participated in the consultation process:

**Table 1. List of Stakeholders Consulted**

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
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<tbody>
<tr>
<td>Bob Fessenden</td>
<td>Fellow of the Institute for Public Economics, University of Alberta</td>
</tr>
<tr>
<td>Chad Gaffield</td>
<td>President, Social Sciences and Humanities Research Council of Canada</td>
</tr>
<tr>
<td>Chaviva Hošek, O.C.</td>
<td>President Emeritus, Canadian Institute for Advanced Research (CIFAR) and Professor, School of Public Policy and Governance, University of Toronto</td>
</tr>
<tr>
<td>Denis Leclerc</td>
<td>Manager, Policy Development and Strategic Planning, Natural Sciences and Engineering Research Council of Canada</td>
</tr>
<tr>
<td>David Watters</td>
<td>President, Global Advantage Consulting Group</td>
</tr>
<tr>
<td>Geoff Munro</td>
<td>Chief Scientist, Natural Resources Canada</td>
</tr>
<tr>
<td>Name</td>
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</tr>
<tr>
<td>Glenda Yeates</td>
<td>Deputy Minister, Health Canada</td>
</tr>
<tr>
<td>Graham Bell</td>
<td>President-elect, The Royal Society of Canada and Research Director, James McGill Professor Chair, Department of Biology, McGill University</td>
</tr>
<tr>
<td>Iain Stewart</td>
<td>Assistant Deputy Minister, Strategic Policy Sector, Industry Canada</td>
</tr>
<tr>
<td>Ilse Treurnicht</td>
<td>CEO, MaRS Discovery District</td>
</tr>
<tr>
<td>John Cairns</td>
<td>President-elect, Canadian Academy of Health Sciences and Professor of Medicine, University of British Columbia</td>
</tr>
<tr>
<td>Karen Dodds</td>
<td>Assistant Deputy Minister, Environment Canada</td>
</tr>
<tr>
<td>Kevin Fitzgibbons</td>
<td>Director, Innovation, S&amp;T Division, Department of Foreign Affairs and International Trade</td>
</tr>
<tr>
<td>Kevin Keough</td>
<td>Executive Director, Alberta Prion Research Institute</td>
</tr>
<tr>
<td>Len Goodman</td>
<td>Head (acting), Individual Behaviour and Performance Section, Defence Research and Development Canada (DRDC)</td>
</tr>
<tr>
<td>Marcel Côté</td>
<td>Founding Partner, SECOR Inc.</td>
</tr>
<tr>
<td>Paul Davidson</td>
<td>President and CEO, Association of Universities and Colleges of Canada</td>
</tr>
<tr>
<td>Richard Marceau</td>
<td>President, Canadian Academy of Engineering and Vice-President, Research, Memorial University</td>
</tr>
<tr>
<td>Robert Thirsk</td>
<td>Vice-President, Public, Government and Institute Affairs, Canadian Institutes of Health Research</td>
</tr>
<tr>
<td>Scott Vaughan</td>
<td>President and CEO, International Institute for Sustainable Development and Former Commissioner for the Environment and Sustainable Development, Office of the Auditor General of Canada</td>
</tr>
<tr>
<td>Wendy Tilford</td>
<td>Deputy Minister, Ontario Ministry of Research and Innovation</td>
</tr>
<tr>
<td>Wendy Watson Wright</td>
<td>Executive Secretary and Assistant Director General, Intergovernmental Oceanographic Commission, UNESCO</td>
</tr>
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The following chapters present the findings of the Panel organized by the five core issues. The full methodology followed by the Panel to conduct the evaluation can be found in Appendix I.
Chapter 2: Core Issue #1 — Continued Need for the Program

The first core issue considered by the Panel involved assessing if there is a continuing need for the type of program activity provided by the Council.

This was a complex question for the Panel to consider for three reasons:

1) the Council is not a program operated by a government department. The nature of the activity for which the Council was established (assessments undertaken by expert panels) precludes its designation as a program, further adding to the challenge of evaluating it against the normal program criteria;

2) the Council does not have a specific stakeholder community. Although the Council has stakeholder communities for each specific assessment, it does not have an economic or political constituency for the enterprise; and

3) in relation to its international counterparts, the Council is a relatively young organization which offers a relatively small window of time to establish itself as an organization.

In light of the above, the Panel considered various ways in which the need for the Council could be assessed within the required evaluation framework. It decided to approach this issue by focusing its analysis on the following questions:

- What does the trend line of requests look like?
- Is the range of sponsors narrowing or expanding?
- Are there alternatives to the Council that the policy community can access?

The following is a summary of the results of this analysis.

Trend Line of Assessment Requests

Given that the work of the Council is demand-driven, the Panel reviewed data related to the demand for the Council’s work. As Figure 2.1 illustrates, demand for Council assessments has clearly increased year over year since the organization was established in 2006.
More specifically, over the last three years, demand increased by 85 per cent over the first four years of the Council’s operations. This increase in assessments indicated to the Panel that the quality of the Council’s product is sound and that the need for assessment is not abating or levelling off.

The Panel also noted evidence of repeat customers. Four sponsors returned to the Council with additional assessment requests after the completion of their initial assessments. Of these four sponsors: Industry Canada (IC) sponsored seven assessments; Health Canada (HC) sponsored five assessments; Natural Resources Canada (NRCan) sponsored three assessments; and Environment Canada (EC) sponsored two assessments.

Diversification of Assessment Sponsors

The Panel also considered the profiles of assessment sponsors and found that the diversity of sponsors also increased since the Council’s inception. This suggested that, after starting from a

Figure 2.1: Intensity of Assessment Activity (By Fiscal Year)
narrow base, a broader constituency is now seeking evidence-based assessments from the Council. This new constituency includes institutions such as Defence Research and Development Canada (DRDC), Aboriginal Affairs and Northern Development Canada (AANDC), Public Safety Canada (PSC), and Library and Archives Canada (LAC). A further breakdown of the diversity of sponsors is illustrated in Figure 2.2.

![Figure 2.2 Percentages of Reports Sponsors by Category](image)

Source: Council of Canadian Academies

Note: this chart includes all Council assessments completed and ongoing, within and outside of the funding agreement.

**Figure 2.2 Percentages of Reports Sponsors by Category**

**Alternative Approaches**

The final area considered by the Panel on this issue was whether there are other sources of scientific assessment available to policy-makers if the Council did not exist. For example, departments could use internal resources to conduct research on specific questions. Consulting companies could be hired to do the work. Questions could be referred to the Science, Technology and Innovation Council (STIC), which also provides external science advice to the government. The government could also set up *ad hoc* panels, such as the Independent Panel on Federal Support to Research and Development (R&D) (commonly referred to as the Jenkins Panel), to study specific questions. In order to address this issue, the Panel sought the views of stakeholders related to the advisability of alternative approaches to the Council. Most, if not all, respondents spoke about the
uniqueness of the contributions made by the Council. For example, Glenda Yeates, Deputy Minister, Health Canada said:

*The Council gives us what a consulting firm could not give. We very much appreciate the unbiased, technical experts. The Council has a firm approach, gathers the expertise, follows a process and comes out with a non-biased report. And they go beyond the internal expertise in the department.*

Iain Stewart, Assistant Deputy Minister, Strategic Policy Sector, Industry Canada stated that:

*The Council is a neutral place to look at questions. It ensures the highest quality of people will be part of the work and addresses topics in a way that brings that quality to bear. The Council is a third-party entity that gives blue chip responses to complex questions.*

A similar sentiment was provided by Chad Gaffield, President of Social Sciences and Humanities Research Council (SSHRC). He stated that:

*SSHRC appreciates how the Council advances our understanding through sophisticated and innovative methodologies for tackling complex questions. By working to integrate all the ways of knowing, the Council is contributing significantly to our ability to address successfully some of the most crucial issues of our times.*

Sponsors and policy-makers were unanimous in conveying that the Council is a place they can turn to for high-quality, unbiased, evidence-based commentary on policy issues. The message from stakeholders was clear that the Council provides a “safe haven” for independent and unbiased thinking that is not being offered by any other organization.

The Panel also heard additional comments that spoke to the high-quality expertise represented by the Council’s expert panels. The high quality of expertise on the panels was not reported to be available from any other organization. The rigorous peer review of the draft reports was also viewed as a unique step in the assessment process that is not available in the same way from other organizations. This step enhances the credibility and quality of Council reports.

The stakeholders interviewed noted that alternatives such as *ad hoc* expert panels, internal research or consulting companies do not provide the same level of all-purpose, neutral, credible and quality results.
Conclusion

Based on the evidence reviewed and comments by those who have engaged the services of the Council, the Panel determined that there is no readily available alternative to the work performed by the Council.

Given the methodological approach used by the Council and the neutrality and credibility of its assessments, the Panel concluded that the Council offers policy-makers and the public an essential perspective through its deliberate and rigorous methodology. The Internet has fuelled the growth of short-termism. This has been compounded by the 24/7 news cycle. As a result, complex issues often receive simple and at times unsubstantiated responses. This context reinforces the need for the services provided by the Council.
Chapter 3: Core Issue #2 — Alignment with Government Priorities

The Panel has noted the government’s sustained and ongoing commitment to science and technology, as demonstrated by the statements and decisions made by the Prime Minister and the Minister of Finance. Therefore, with regard to the second core issue, the Panel focused its efforts on determining if the Council’s work aligns with governmental priorities at the departmental level.

In considering this question, the Panel considered the following facts:

1) Twelve different Federal Ministers have requested that the Council undertake assessments on various questions. They are:
   - The Honourable Maxime Bernier, on behalf of Industry Canada
   - The Honourable Tony Clement, on behalf of Health Canada
   - The Honourable Gary Lunn, on behalf of Natural Resources Canada
   - The Honourable Jim Prentice, on behalf of Industry Canada
   - The Honourable James Moore, on behalf of Heritage Canada
   - The Honourable Gerry Ritz, on behalf of Agriculture and Agri-Food Canada
   - The Honourable Leona Aglukkaq, on behalf of Health Canada
   - The Honourable Peter Kent, on behalf of Environment Canada
   - The Honourable Christian Paradis, on behalf of Industry Canada
   - The Honourable Diane Finley, on behalf of Human Resources and Skills Development Canada
   - The Honourable Vic Toews, on behalf of Public Safety Canada
   - The Honourable Joe Oliver, on behalf of Natural Resources Canada

2) Prior to assessment questions being presented to the above-mentioned Cabinet Ministers, each question was reviewed by an interdepartmental committee of Assistant Deputy Ministers. They were tasked in this process to scrutinize and analyse each question in order to ensure that it reflected the requisite clarity and was in keeping with departmental priorities.

3) In the development of individual assessment proposals, the Panel found clear signs of interdepartmental cooperation. In one case (The State of Science Culture in Canada) three departments worked together to co-sponsor an assessment question as the
subject matter was of relevance to their mandates and priorities. In other cases, when complex assessment topics fall within the mandates of more than one federal department, those departments cooperate and support each other in the development of the assessment proposal.

Conclusion

Given the cumulative participation of all parties mentioned above in developing, shaping and approving an assessment question, the Panel has concluded that the work of the Council is in line with government priorities both at the political and public service levels.
Chapter 4: Core Issue #3 — Alignment with Federal Roles and Responsibilities

The third question which the Panel addressed was the conformity and alignment of Council activities with federal roles and responsibilities.

In order to fully dispose of this charge, the Panel reviewed the assessments that have been completed to ascertain if the subject matter of each fell within the purview of the sponsoring federal government. More specifically, it looked at each question and identified where it fit within the mandate of the department. See a summary below of the evidence considered by the Panel for a selection of assessments that have been completed. A full list of completed assessments and the corresponding federal mandates is provided in Appendix VI.

Assessment Alignment with Federal Roles and Responsibilities (Completed Assessments)

1. *Energy from Gas Hydrates: Assessing the Opportunities and Challenges for Canada (2008)* – Natural Resources Canada

   The Charge: What are the challenges for an acceptable operational extraction of gas hydrates in Canada?

   - This flows from Natural Resources Canada’s mandate to ensure the sustainable development of Canada’s natural resources.


   The Charge: How should the innovation performance of Canadian firms be assessed? How innovative are Canadian firms, and what do we know about their innovation performance at a national, regional and sector level? Why is business demand for innovation inputs (for example, research and development, machinery and equipment, and skilled workers) weaker in Canada than in many other OECD countries? What are the contributing factors, and what is the relative importance of these contributing factors?

   - This flows from Industry Canada’s mandate to foster and promote science and technology in Canada.

The Charge: From a science perspective, what is needed to achieve sustainable management of Canada’s groundwater resources?

- This flows from Natural Resources Canada’s mandate to ensure the sustainable development of Canada’s natural resources.


The Charge: What additional science is needed to better guide sustainable management of water to meet the needs of agriculture?

- This flows from Agriculture and Agri-Food Canada’s mandate to administer and enforce the Health of Animals Act; establish policies and standards relating to the safety and nutritional quality of food sold in Canada and assess the effectiveness of the Agency’s activities related to food safety.

In addition to the examples provided above, one assessment was conducted for the Ontario Ministry of Research and Innovation to assess the impact of the government’s investments in innovation and identify metrics (Innovation Impacts: Measurement and Assessment). The Panel noted that, while the sponsor was a provincial ministry, the results of the assessment were highly fungible with the many program activities of the federal government.

Conclusion

The process by which the federal government approves questions for assessments signals that there is alignment between federal priorities and the work of the Council. As well, having considered the alignment between Council assessment topics and federal government roles and responsibilities, the Panel concluded that all assessments are indeed within the ambit of the federal government.
Chapter 5: Core Issue #4 — Achievement of Expected Outcomes

The Panel considered this question to be the key issue of its evaluation, and therefore it was the issue on which the Panel spent most of its time. The Panel’s focus was to ascertain whether the Council had achieved impact. Or put another way, if the Council had not been around for these past eight years, would the Canadian policy landscape have been very different?

Measuring the impact on policy is not always straight-forward. Policy-making occurs in a variety of cycles and is influenced by a number of factors (economic, political, and social). To evaluate this issue, the Panel focused on three segments of the Canadian policy community:

- The Government of Canada
- Opinion leaders
- Civil society

The following are the Panel’s findings by community segment.

The Government of Canada

Having taken stock of the 16 assessments that have been completed within the Funding Agreement, the Panel was struck by the fact that a number of reports had a direct impact on policy. In particular, the Panel noted the following direct examples of impact on policy.

**Science and Technology Strategy**

In June 2006, Industry Canada asked the Council to consider the state of science and technology in Canada in order to gain a better understanding of Canada’s S&T strengths and capacity. In September 2006, the Council released their inaugural report, *The State of Science and Technology in Canada*. The findings identified four areas in which Canada appeared to be comparatively weak or declining in science and technology capacity. It also identified four areas of Canadian strength: natural resources, information and communications technologies, health and related life sciences, and technologies and environmental technologies.

Subsequent to the release of this report, the Prime Minister announced in 2007 the Government of Canada’s S&T Strategy, which used as one of its pillars the four S&T areas that the Council’s report identified as strengths. The identification of these four key priorities clearly framed the
area of focus in S&T research and policy development for the Government of Canada going forward.

**Federal Support for Business Innovation**

In 2009, Industry Canada asked the Council to conduct an assessment that focused on the innovation performance of Canada’s business sector. The objective of the assessment was to better understand why Canada was falling behind instead of moving forward in this area crucial to the Canadian economy. The Council’s assessment, *Business and Innovation: Why Canada Falls Short*, was released in 2009 and concluded that the persistently lagging growth of labour productivity in Canada was primarily due to the weak innovation performance of the business sector, and that this weak innovation performance was due to the fact that relatively few Canadian companies adopted innovation-based business strategies.\(^2\) Notwithstanding the many programs which expended millions of dollars annually, Canada was not scoring high in the ratio of R&D to GDP.

Subsequent to the report’s release, the Minister of State, Science and Technology announced the formation of the Independent Panel on Federal Support to Research and Development (R&D) to “provide recommendations on maximizing the effect of federal programs that contribute to innovation and create economic opportunities for business.” The Panel presented *Innovation Canada: A Call to Action* in October 2011.

**The State and Trends of Biodiversity in Canada**

In September 2007, the Minister of Canadian Heritage, on behalf of the Canadian Museum of Nature, asked the Council to undertake an assessment of the state and trends of biodiversity science in Canada. In November 2010, the Council released the final report by this expert panel, which explored the state of Canadian taxonomy.

Subsequent to its release, this report was used in 2011 by the Canadian Museum of Nature as a reference tool in guiding the Federal Biodiversity Information Partnership. In addition, the creation of two Museum Research Centres of Excellence was stimulated by the findings of this assessment.

**Arctic Research**

In 2007, Indian and Northern Affairs Canada asked the Council to prepare an assessment of research issues for the development of an Arctic Research Vision. This assessment grew out of the Government of Canada’s 2007 Speech from the Throne commitment to the construction of a world-class Arctic research station as part of a larger northern strategy. The Council was asked to analyze the four scientific research priorities put forward by the government for the Canadian High Arctic Research station. In the Council’s assessment report, *Vision for the Canadian Arctic Research Initiative: Assessing the Opportunities*, released in 2008, the Expert Panel agreed with the government’s research priorities and added two more priorities for the government to consider.

The 2010 federal budget included an announcement of funding for the station. Moreover, the 2012 budget provided an update on this initiative, which drew from the assessment findings.

**Research Integrity**

In 2009, Industry Canada asked the Council to undertake an assessment examining the key research principles, procedural mechanisms, and appropriate practices for their application across research disciplines and institutions in Canada. The Council assessment, *Honesty, Accountability and Trust: Fostering Research Integrity in Canada*, was released in 2010 and identified the need for a common, system-wide approach to research integrity that involves all actors and disciplines in the research community.

The findings informed the development of the *Tri-Agency Framework: Responsible Conduct of Research* in August 2011. Of particular note was the Framework’s attention to the disclosure of names of those engaged in a serious breach of policy, an issue identified in the Council’s assessment. The report was also used by universities across Canada as a reference tool for developing institutional policies, as they rely on the Tri-Agency’s policy framework to build their own policies and must adhere to its ethical standards of conduct in order to receive research funding.

The Panel saw significant evidence of policy impact made by the 16 reports completed under the Funding Agreement over the past eight years. Stakeholders shared examples of assessments having made direct policy impacts within their own organizations. From this evidence, the Panel concluded that the Council has had an impact in a number of policy areas.
Opinion Leaders

Public policy-making and development often go through many phases and have many contributors. While governments have the final say, the incubation phase can draw on evidence and perspectives from many different quarters. For this reason, the Panel sought to ascertain whether opinion leaders in a variety of sectors were familiar with the Council’s work and whether they considered it useful. More specifically, the Panel considered input from opinion leaders which came from existing information previously gathered by the Council as well as from the Panel’s interviews with stakeholders (including those from various segments of society).

Noteworthy comments included the following:

*Non-government Sources*

“It is clear the Council is well on its way to becoming recognized as a powerful organization for all aspects of research and evidence critical to Canadian policy development and, at the same time, useful for science globally.” — Rita R. Colwell, former Director of the U.S. National Science Foundation (December 2012)

“With the CCA in existence there is a greater sense in the science community that we now know some things about the current state of knowledge — answers to questions that we didn’t have before. [We] now have something more robust and a place to go [to] ask the question if you don’t know.” — Chaviva Hošek, President Emeritus, Canadian Institute for Advanced Research (CIFAR) and Professor, School of Public Policy and Governance, University of Toronto (June 2013)

“I look to the Council reports for evidence when benchmarking Canada internationally. That trusted source is very important. It is not an assembly of evidence to support a position. It is an assembly of evidence - period. It leaves room for co-creating smart public policy” — Ilse Treurnicht, CEO, MaRS Discovery District (June 2013)

“At a time when innovation and the discovery and application of new knowledge have never been more important, the Council of Canadian Academies continues to produce material that informs public discussion and to bring together some of the country’s top minds to help steer a path towards a better future.” — Jeffrey Simpson, National Affairs Columnist for the Globe and Mail (April 2013)
“The Council has become very influential in a short period of time. The work of the Council is very important. The assessment findings are becoming critical influences on policy – beyond science – its regulatory policy, its economic policy, etc.” — Marcel Côté, Founding Partner, SECOR Inc. (June 2013)

“At the Office of the Auditor General, the Council of Canadian Academies was an important source for reliable scientific information that was invaluable to policy-makers. In my former role at the Auditor General’s Office, CCA reports were used because the findings were of the highest quality.” — Scott Vaughan, President and CEO, International Institute for Sustainable Development, and former Commissioner of the Environment and Sustainable Development, Office of the Auditor General of Canada. (May 2013)

“We owe a lot of gratitude to the Council of Canadian Academies, whose report [on Business Innovation] should be required reading for anyone who wants Canada to make smart choices and enhance its prosperity.” — Paul Wells, Political Editor, Maclean’s (May 2010)

Based on this testimony and evidence, the Panel concluded that the assessments done by the Council were respected by external opinion leaders and were making a difference outside of federal government departments.

Civil Society

The Panel, in recognition of the reality that policy developments have different gestation periods depending on timing, circumstances, and alignment of interests, thought it would be useful to investigate the impact of the Council’s work beyond the realm of policy-makers and opinion leaders. In order to do so, the Panel looked at evidence of the Council’s activities and data in regards to civil society.
The Panel found evidence of growing civil society interest in the Council’s assessments as demonstrated by:

- the increase in the total number of website visits from 52,066 to 80,737 (up 55 per cent) year to year from 2011/12 to 2012/13 (see Figure 5.1);
- growth in the number of unique visitors from 30,746 to 53,357 (up 73.5 per cent) in the same timeframe (see Figure 5.2);
- the increase in downloads of reports and supplementary material by 122 per cent (from 6,399 to 14,659 year-to-year) (see Figure 5.3); and
- growth in social media referrals from 515 in 2011/12 to 2,732 in 2012/13 (see Figure 5.4).

The high penetration reflects the significant outreach the Council has undertaken to enhance public awareness and understanding of the sciences. This is part of the first objective in the Funding Agreement.
The Panel noted that the Council makes a significant effort to reach a general audience through outreach activities that make use of the Web, social media and presentations at conferences. All reports are released publically and many steps are taken to promote the reports including press releases, website, Twitter and Facebook postings, media interviews, contributions to articles, presentations and speeches. A plain language Report in Focus is also prepared for each assessment.

The Panel also considered outreach activities in which the Council is asked to participate. These activities raise awareness and understanding with groups outside of the assessment sponsors. Examples of these activities from the 2012/2013 fiscal year included:

- presentations at the Canadian Science Policy Conference (CSPC), the Alliance for the Commercialization of Canadian Technologies (ACCT) Leaders Forum;
- briefings to Department of Foreign Affairs and International Tread (DFAIT) embassy staff and Industry Canada staff, the Assistant Deputy Minister (ADM) Committee on Science and Technology, the ADM Integration Board, and the annual Social Sciences and Humanities Research Council (SSHRC) Leaders’ Meeting; and
- profile at the American Association for the Advancement of Science (AAAS) annual conference.

Conclusion

The Panel concluded that the Council has had substantial impact on a number of policy and program areas, and given its rigorous, methodological approach, will continue to have impact beneficial to the government of Canada, opinion leaders, and Canadian society.

The Panel further concluded, based on many examples identified, that certain policies would not have occurred without Council assessments. Moreover, given its connection with opinion leaders and civil society, the Council has planted seeds that will have future policy and program impact.
Chapter 6: Core Issue #5 — Demonstration of Efficiency and Economy

The last issue the Panel had to consider was related to the operational efficiency, effectiveness and economy of the organization. The Panel considered this issue in two ways.

Operational Efficiency and Effectiveness

For this issue, the Panel relied primarily on the Performance Audit of the Council of Canadian Academies, an independent performance audit conducted by Hickling Arthurs Low in May 2013. This audit considered the economy, efficiency and effectiveness of the work of the Council in great detail.

The audit found that the Council:

a) is performing economically, efficiently and effectively in all areas reviewed; and
b) has the necessary financial, investment and risk management policies and practices in place.

The findings of the independent performance audit attest to the Council’s solid stewardship of the government’s initial investment.

The Panel concurred with the findings of the Performance Audit report and concluded that the Council did meet the requirements.

Additional Value for Money

The Panel also took note of the significant contribution that volunteers from across Canada and around the world have made to the deliberations and reports by the Council.

By the end of FY 2012/13, the cumulative contribution by volunteers represented an in-kind value of approximately $13 million.

The Council has expended to date approximately $26 million for the 16 assessments completed and the work related to the 12 ongoing assessments, which means that it has leveraged $1 external for every $2 spent to date.
In addition to the financial in-kind contribution, the Panel also noted the diversity and high-quality of the members of the various panels and Scientific Advisory Committee.

The Panel noted that the federal government could not have obtained that level of expertise without some structure of recruitment and management analogous to the Council, which has access to this expertise through its various stakeholder groups. More importantly, the Council process ensures that the appropriate expertise is around the table in order to fully respond to the multi-disciplinary questions being asked.

Conclusions

The evidence demonstrated that the Council functions in an efficient and effective manner. Further to that, the Panel noted the additional financial benefits realized through the value of the volunteers’ expertise and time. From this evidence, the Panel concluded that the Council operates efficiently and economically.
Chapter 7: Other Comments

The Panel would also like to comment on a few areas outside of the Evaluation Framework. These comments are in no way intended to be recommendations, but instead something to be noted for the Board’s due consideration.

Governance

The Panel recognized that the Council is bound by its Funding Agreement with the Government of Canada not to provide direct funds to the Member Academies. As noted in the 2011 Evaluation report, the Panel noted the spirit and interest in collaboration that exists between the Council and these organizations. The Panel did note that there is a variety of modalities by which the Council interacts and intersects with the Member Academies. It would be helpful for the Council to continue these various initiatives to collaborate with the Member Academies.

International Involvement

The Panel noted that the Council’s Board of Governors made a decision not to focus on international involvement in recognition that participation in certain international meetings falls under the domain of the Member Academies. Having the Member Academies represent the Council at international events and conferences would be an area worth pursuing.

Product Diversification

The Panel observed that some sponsors and stakeholders suggested that it would be useful for the Council to provide a secondary product offering. This product would replicate the method of the current assessment process but within a shorter timeframe. The Panel agreed that this would be worth considering. However, it would be important to ensure that any secondary product offering not compromise the well-established and highly respected Council brand.
Chapter 8: Overall Conclusions

A summary of the multiple lines of evidence considered by the Panel for this evaluation is presented in the body of this report. The Panel considered this evidence and completed its analysis in light of the five core issues identified by the Treasury Board Guidelines. The conclusions for each issue are presented as follows:

*Issue 1: Continued need for program*

The Panel concluded that the neutrality and credibility of Council assessments offer policy-makers and the public an essential perspective through its deliberate and rigorous methodology. As such, the Panel determined that there is a continued need for this organization.

*Issue 2: Alignment with government priorities*

Given the cumulative participation of all parties in developing, shaping and approving an assessment question, the Panel concluded that the work of the Council is in line with government priorities both at the political and public service levels.

*Issue 3: Alignment with federal roles and responsibilities*

The process by which the federal government approves questions for assessments signals that there is alignment between federal priorities and the work of the Council. As well, having considered the alignment between Council assessment topics and federal government roles and responsibilities, the Panel concluded that all assessments were indeed within the ambit of the federal government.

*Issue 4: Achievement of expected outcomes*

The Panel concluded that the Council has had substantial impact on a number of policy and program areas, and given its rigorous, methodological approach, will continue to have impact beneficial to the government of Canada, opinion leaders and Canadian society.

The Panel further concluded, based on many examples identified, that certain policies would not have occurred without Council assessments.
**Issue 5: Demonstration of efficiency and economy**

The evidence illustrated that the Council functions in an efficient and effective manner. Further to that, the Panel noted the additional financial benefits realized through the value of the volunteers’ expertise and time. From this evidence, the Panel concluded that the Council operates efficiently and economically.

**Meeting the Value Proposition**

The Panel also considered the Council to have delivered on its value proposition as stated below:

> The Council of Canadian Academies offers insight and evidence to enrich Canadian policy development and decision-making. This is achieved by harnessing the collective wisdom of the finest minds to develop independent, authoritative, and evidence-based expert assessments on the issues that matter most to Canadians. ³

**Conclusion**

After reviewing multiple lines of evidence and consulting several stakeholders from various points of interest, the Panel concluded that the Council of Canadian Academies has successfully delivered on the five core issues identified by the Treasury Board Guidelines.

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References

Council of Canadian Academies, *Analysis of Sponsors Proposals*.


Council of Canadian Academies, *Funding Agreement*.


September 2013

Appendix I — Methodology

This evaluation report summarizes the evidence described above and outlines the results of the evaluation process. The body of the report highlights examples of evidence and describes the Panel’s conclusions. The appendices provide more detailed evidence to support the findings described in the body of the report.

In order to address the Treasury Board Secretariat Evaluation Guidelines, the following approach was taken:

Review Existing Council Documents and Other Relevant Data

- Council of Canadian Academies’ Performance Audit Report
- Council of Canadian Academies’ annual reports
- Council of Canadian Academies’ Strategic Plan Review
- Council of Canadian Academies’ data and background information
- Council of Canadian Academies’ Funding Agreement
- Council of Canadian Academies’ By-laws
- Council of Canadian Academies’ history document
- Council of Canadian Academies’ Strategic Plan 2011–2014
- Council of Canadian Academies’ Corporate Overview
- Council of Canadian Academies’ assessment reports
- Background information from secondary research

Interviews with Stakeholders

Stakeholders were invited to participate in interviews with the Panel over a two-day period. The interviews ranged from in-person meetings in small groups (1 to 3 stakeholders in attendance) to one-on-one teleconferences, depending on the availability of the invitees. The stakeholders represented the following groups:

- Past sponsors
- Member Academies
• Current sponsors
• Sponsors from outside the Funding Agreement
• Policy community and Council report users
• Panel members
• Interdepartmental Working Group of the ADM Committee on S&T

2012/2013 Performance Audit of the Council of Canadian Academies

The Council commissioned an external performance audit just prior to the external evaluation. The performance audit focused on: (a) governance and strategic planning processes and the corporate structures; (b) plans, practices, and processes used in the management of the Council’s assessment projects; and (c) corporate management.

The Panel used the findings of this audit to provide evidence on issues and indicators related to these three areas of focus.
Appendix II — Biographies of Evaluation Panel Members

Richard Dicerni (Chair)
Adjunct Research Professor, Lawrence Centre, Ivey Business School, Western University

Richard Dicerni held the position of Deputy Minister of Industry Canada from 2006 to 2012.

Born and raised in Montreal, Mr. Dicerni graduated from the College Sainte Marie in 1969 with a Bachelor of Arts; he pursued graduate studies at the Kennedy School of Government at Harvard where he earned a Master's in Public Administration in 1981.

Mr. Dicerni started his career with the federal government in 1969. In the seventies and eighties, he held a number of executive positions in the federal public service including Senior Assistant Deputy Minister, Health and Welfare and Deputy Secretary to the Cabinet.

In 1992 he joined the Ontario Government as Deputy Minister of Environment and Energy; in 1995, he assumed the position of Deputy Minister, Education, Post Secondary Education and Training.

In 1996, Mr. Dicerni was appointed President and CEO of the newly established Canadian Newspaper Association. Mr. Dicerni left this position in 1998 to become Senior Vice President at Ontario Power Generation (OPG). He stayed at OPG for the next seven years and led the company between 2003 and 2005.

Prior to rejoining the Government of Canada, Mr. Dicerni was a partner at Mercer Delta, a management consulting firm.

He has served on the boards of Trent University, the Credit Valley Hospital, Atomic Energy of Canada Ltd (AECL) and the Public Policy Forum.
James Reisa  
*Director, Board on Environmental Studies and Toxicology, National Research Council, National Academy of Sciences*

Dr. Reisa is Director of Environmental Studies and Toxicology at the U.S. National Research Council, the principal operating arm of the National Academy of Sciences and the National Academy of Engineering. Since 1986, nearly 300 reports produced there under his direction have been influential in shaping environmental legislation, policy decisions, and scientific practices. Dr. Reisa served with the White House Council on Environmental Quality during the Nixon, Ford, and Carter Administrations and then as a senior official at the U.S. EPA. In 2001, he received the Distinguished Service Award of the National Academy of Sciences.
Stephen J. Toope  
President and Vice Chancellor, University of British Columbia

Professor Stephen J. Toope was named the 12th President and Vice-Chancellor of The University of British Columbia on March 22, 2006. He began his second five-year term in July 2011.

An International Law scholar who represented Western Europe and North America on the UN Working Group on Enforced or Involuntary Disappearances from 2002-2007, Professor Toope’s academic interests include public international law, legal theory, human rights, international dispute resolution and family law.

Professor Toope is active with many associations, currently serving as Chair of the Association of Universities and Colleges of Canada (AUCC), Member of the Research Council of the Canadian Institute for Advanced Research (CIFAR), and as a Member of the Board of Directors for the Public Policy Forum. He is Past Chair of the Research Universities’ Council of British Columbia (RUCBC) and World University Services Canada (WUSC).

Prior to joining UBC, Professor Toope was President of the Pierre Elliott Trudeau Foundation, a position he held since 2002. The Foundation is an independent, private, and non-partisan organization created to promote outstanding research and interaction between researchers in the social sciences and humanities and the wider society. From 1994-1999, Professor Toope served as the Dean of McGill University’s Faculty of Law. Previously, he served as Law Clerk to the Rt. Hon. Chief Justice Dickson of the Supreme Court of Canada from 1986-1987. He continues to conduct research on many aspects of international law and is currently working on issues of human rights and culture, and the origins of international obligation in international society. His most recent book, with Jutta Brunnée, is Legitimacy and Legality in International
Law: An Interactional Account, which won the American Society of International Law’s 2011 Certificate of Merit for Creative Scholarship.

A Canadian citizen, Professor Toope earned his PhD from Trinity College, Cambridge (1987), his degrees in common law (LLB) and civil law (BCL) with honours from McGill University (1983), and graduated magna cum laude with his AB in History and Literature from Harvard University (1979).
Appendix III — About the Council of Canadian Academies

History

The Council of Canadian Academies (the Council) is an independent, not-for-profit corporation that supports evidence-based, expert assessments on the science underlying matters of public interest. It was originally incorporated as the Canadian Academies of Science (CAS) in April 2002 by three founding member academies: the Royal Society of Canada (RSC), the Canadian Academy of Engineering (CAE), and the Canadian Institute of Academic Medicine (subsequently to evolve into the Canadian Academy of Health Sciences - CAHS). The Council began operations in 2006 with the appointment of its first executive officers.4

The Council is registered under the Canada Corporations Act and its operations are supported by a $30M grant over 10 years received from the Government of Canada. This entitles the federal government to refer up to five questions per year to the Council for assessment. The Council may also conduct assessments outside of its agreement with the government with the (incremental) cost of such assessments covered by the requesting sponsors directly. Potential assessment questions can be referred to the Council by foundations, non-governmental organizations, the private sector, or any level of government. These assessments do not include policy recommendations, but rather describe what is known, and what is not known, about the scientific questions before a panel, and how the scientific facts and implications are relevant to the making of public policy5. All assessment questions, regardless of source, and the resulting reports must be approved by the Council’s Board of Governors and made available publicly, free of charge, in both official languages.

Governance & Management

The Council is led by a 12-member Board of Governors, which is responsible for setting the strategic direction of the organization, ensuring fulfillment of the Council’s mandate and oversight of the Council’s operations. The Board of Governors has a unique structure. Each Member Academy appoints two governors. These six governors then appoint two additional governors from the general public. The remaining four governors are proposed to the Board by the federal Minister of Industry, but are formally appointed by the Board.

4 History of the Creation of the Council of Canadian Academies
5 History of the Creation of the Council of Canadian Academies
The Board of Governors also appoints a Scientific Advisory Committee that provides advice on the substance and procedures of expert assessments, particularly on the following aspects:

- the generation of potential subjects for future assessments;
- the suitability of subjects proposed to the Council for expert assessment;
- the terms of reference for the independent expert panels that carry out the assessments;
- potential membership of expert panels;
- peer review process of draft assessment report; and
- communication of final assessment reports, with the objective of enhancing their impact.

The work of the Council is managed by a small Secretariat under the direction of a President and CEO.
Appendix IV — Council Assessment Process

The Council appoints multidisciplinary panels of experts to respond to assessment questions. By harnessing the collective wisdom of the finest minds through a rigorous and disciplined process, the Council assures the sponsor of the question that the results will be authoritative, evidence-based and independent. The work conducted by the Council addresses a wide spectrum of scientific knowledge. The Council defines “science” broadly to encompass the humanities, engineering, and the natural, social, and health sciences.

A Council assessment is a report that provides an evidence base to inform public policy development in Canada. It may provide an analysis of emerging issues, gaps in knowledge, Canadian strengths or trends and best practices. Council reports are not recommendation-based or policy prescriptive. Final reports do not engage in advocacy but rather present findings and conclusions.

The Council conducts all of its assessments according to a methodology which was born out of experience and the compilation of lessons learned from all assessments. The Council Assessment Lifecycle Methodology (CALM) is a framework which encompasses numerous processes and activities. Using project management tools and techniques, CALM ensures the quality and rigour of a Council assessment in maintained at each step in the process. Broadly defined, the main project phases are illustrated below.

September 2013
Phase 1 – Plan Assessment

✓ Appoint independent panel of volunteer experts
✓ Begin planning the assessment methodology, data gathering techniques, method of analysis and report structure

Phase 2 – Content Development and Peer Review

✓ Collect, assess and analyze evidence as per the methodology
✓ Develop and review drafts of report
✓ Conduct peer review
✓ Sign off on report for publication

Phase 3 – Report Publication

✓ Copyediting, translation, and printing of report
✓ Planning for report launch and dissemination

Phase 4 – Report Dissemination

✓ Launch and dissemination of report

Phase 5 – Project Close Out

✓ Evaluation process
✓ Internal post-project review
✓ Final closure
Appendix V — List of Completed Assessments

**Completed Assessments**

**The State of Industrial R&D in Canada** – Sponsor: Industry Canada (August 2013)

**Innovation Impacts: Measurement and Assessment** – Sponsor: Ontario Ministry of Research and Innovation (April 2013)

**Water and Agriculture in Canada: Towards a Sustainable Management of Water Resources** – Sponsor: Agriculture and Agri-Food Canada (February 2013)

**Strengthening Canada’s Research Capacity: The Gender Dimension** – Sponsor: Industry Canada (November 2012)

**The State of Science and Technology in Canada** – Sponsor: Industry Canada (September 2012)

**Informing Research Choices: Indicators and Judgment** – Sponsor: Industry Canada on behalf of NSERC (July 2012)

**Integrating Emerging Technologies into Chemical Safety Assessment** – Sponsor: Health Canada on behalf of Pest Management Regulatory Agency (January 2012)

**Health Animals, Healthy Canada** – Sponsor: Agriculture and Agri-Food Canada on behalf of Canadian Food Inspection Agency (September 2011)


**Honesty, Accountability, and Trust: Fostering Research Integrity in Canada** – Sponsor: Industry Canada (October 2010)

**Better Research for Better Business** – Sponsor: Industry Canada on behalf of Social Sciences and Humanities Research Council of Canada (May 2009)

**The Sustainable Management of Groundwater in Canada** – Sponsor: Natural Resources Canada (May 2009)

Vision for the Canadian Arctic Research Initiative: Assessing the Opportunities – Sponsor: Aboriginal Affairs and Northern Development Canada (November 2008)

Energy from Gas Hydrates: Assessing the Opportunities and Challenges for Canada – Sponsor: Natural Resources Canada (July 2008)

Small Is Different: A Science Perspective on the Regulatory Challenges of the Nanoscale – Sponsor: Health Canada (July 2008)

Influenza Transmission and the Role of Personal Protective Respiratory Equipment: An Assessment of the Evidence – Sponsor: Health Canada on behalf of Public Health Agency of Canada (December 2007)

The State of Science and Technology in Canada – Sponsor: Industry Canada (September 2006)

Assessments in Progress*

Canadian Ocean Science – Sponsor: the Canadian Consortium of Ocean Research Universities (CCORU)

Harnessing Science and Technology to Understand the Environmental Impacts of Shale Gas Extraction – Sponsor: Environment Canada

The State of Knowledge of Food Security in Northern Canada – Sponsor: Health Canada

The Potential for New and Innovative Uses of Information and Communications Technologies (ICTs) for Greening Canada – Sponsor: Environment Canada

Canadian Industry’s Competitiveness in Terms of Energy Use – Sponsor: Industry Canada

Therapeutic Products for Infants, Children, and Youth – Sponsor: Health Canada

The State of Canada’s Science Culture – Sponsor: Canada Science and Technology Museums Corporation (CSTMC), Natural Resources Canada, and Industry Canada
RISK: Is the message getting through? – Sponsor: Health Canada

Wind Turbine Noise and Human Health – Sponsor: Health Canada

STEM Skills for the Future – Sponsor: Human Resources and Skills Development Canada

The Future of Canadian Policing Models – Sponsor: Public Safety Canada

Timely Access to Health and Social Data for Health Research and Health System Innovation – Sponsor: Health Canada on behalf of the Canadian Institutes of Health Research (CIHR)

Understanding the Potential Impacts of Energy Technologies on the Oil Sands Development – Sponsor: Natural Resources Canada

Memory Institutions and the Digital Revolution – Sponsor: Library and Archives Canada

Medical and Physiological Impacts of Conducted Energy Weapons – Sponsor: Defence Research and Development Canada

* As of September 1, 2013
Appendix VI – Assessment Alignment with Federal Roles and Responsibilities

Completed Assessments

   
   **The Charge:** Industry Canada would welcome the advice of the Council in gaining a better understanding of Canada’s S&T strengths and capacity.
   
   - This flows from Industry Canada’s mandate to foster and promote science and technology in Canada.

   
   **The Charge:** How and where is influenza (both seasonal and pandemic) transmitted? Based on the conclusions of this review, what is the contribution that N95 respirators or surgical masks will make in the prevention of transmission of influenza?
   
   - This flows from Health Canada’s mandate to promote and preserve the physical, mental and social well-being of the people of Canada.

   
   **The Charge:** What is known about the risks that nanomaterials may pose to human health and the environment?
   
   - This flows from Health Canada’s mandate to promote and preserve the physical, mental and social well-being of the people of Canada.

   
   **The Charge:** What are the challenges for an acceptable operational extraction of gas hydrates in Canada?
   
   - This flows from Natural Resources Canada’s mandate to ensure the sustainable development of Canada’s natural resources.
5. *Vision for the Canadian Arctic Research Initiative: Assessing the Opportunities* (2008) – Aboriginal Affairs and Northern Development Canada

The Charge: The Panel will assess the extent to which proposed priorities articulate Canada’s global advantage in terms of Arctic science.

- This flows from Aboriginal Affairs and Northern Development Canada’s mandate to support Aboriginal people (First Nations, Inuit and Métis) and Northerners in their efforts to: improve social well-being and economic prosperity; develop healthier, more sustainable communities; and participate more fully in Canada’s political, social and economic development - to the benefit of all Canadians.


The Charge: How should the innovation performance of Canadian firms be assessed? How innovative are Canadian firms, and what do we know about their innovation performance at a national, regional and sector level? Why is business demand for innovation inputs (for example, research and development, machinery and equipment, and skilled workers) weaker in Canada than in many other OECD countries? What are the contributing factors, and what is the relative importance of these contributing factors?

- This flows from Industry Canada’s mandate to foster and promote science and technology in Canada.


The Charge: From a science perspective, what is needed to achieve sustainable management of Canada’s groundwater resources?

- This flows from Natural Resources Canada’s mandate to ensure the sustainable development of Canada’s natural resources.


The Charge: What are the overall identifiable strengths and weaknesses of the university-based research community in the areas of management, business and finance, broadly defined, according to appropriate indicators?
This flows from Industry Canada’s mandate to foster and promote science and technology in Canada.


   **The Charge:** What are the key research integrity principles, procedural mechanisms, and practices, appropriate in the Canadian context, that could be applied across research disciplines at institutions receiving funds from the federal granting councils?

This flows from Industry Canada’s mandate to foster and promote science and technology in Canada.


   **The Charge:** What are the state and trends of biodiversity science in Canada? Are we equipped to understand the challenges of our biodiversity resources?

This flows from Heritage Canada’s mandate to promote culture, the arts, heritage, official languages, citizenship and participation as well as Aboriginal, youth and sport initiatives.

11. **Healthy Animals, Healthy Canada (2011) – Agriculture and Agri-Food Canada (Canadian Food Inspection Agency)**

   **The Charge:** What is the state and comprehensiveness of risk assessment techniques in animal health science, specifically pertaining to risks that may impact on human health?

This flows from Agriculture and Agri-Food Canada’s mandate to administer and enforce the Health of Animals Act; establish policies and standards relating to the safety and nutritional quality of food sold in Canada; and assess the effectiveness of the Agency’s activities related to food safety.


   **The Charge:** What is the scientific status of the use of integrated testing strategies in the human and environmental regulatory risk assessment of pesticides?

This flows from Health Canada’s mandate to promote and preserve the physical, mental and social well-being of the people of Canada.

**The Charge:** What do the scientific evidence and the approaches used by other funding agencies globally have to offer, in terms of performance indicators and related best practices in the context of research in the natural sciences and engineering, carried out at universities, colleges, and polytechnics?

- This flows from Industry Canada’s mandate to foster and promote science and technology in Canada.


**The Charge:** What is the current state of science and technology in Canada?

- This flows from Industry Canada’s mandate to foster and promote science and technology in Canada.


**The Charge:** What policies and what societal, cultural, and institutional, economic, and/or other relevant factors influence the career trajectory of women researchers in Canadian universities and underlie gender disparities observed in Canadian university researcher’s statistical profile, by discipline area, rank, duty/position/stature, salary, tenure, research funding and/or any other relevant indicators?

- This flows from Industry Canada’s mandate to foster and promote science and technology in Canada.


**The Charge:** What additional science is needed to better guide sustainable management of water to meet the needs of agriculture?

- This flows from Agriculture and Agri-Food Canada’s mandate to administer and enforce the Health of Animals Act; establish policies and standards relating to the safety and nutritional quality of food sold in Canada; and assess the effectiveness of the Agency’s activities related to food safety.

   **The Charge:** What is the current state of industrial research and development (R&D) in Canada?

   • This flows from Industry Canada’s mandate to foster and promote science and technology in Canada.

   * Completed outside the Funding Agreement
Appendix VII — Examples of References to S&T in Federal Budgets

FROM FEDERAL BUDGET 2013

Highlights from Chapter 3.4:

Supporting Advanced Research

- $37 million in new annual support for research partnerships with industry through the granting councils, including $12 million to enhance the College and Community Innovation Program.
- $165 million in multi-year support for genomics research through Genome Canada, including new large-scale research competitions and participation by Canadian researchers in national and international partnership initiatives.
- $225 million to be used by the Canada Foundation for Innovation to support advanced research infrastructure priorities and sustain the long-term operations of the Foundation.

Pursuing a New Approach to Supporting Business Innovation

- $121 million over two years to invest in the strategic focus of the National Research Council to help the growth of innovative businesses in Canada.
- $20 million over three years to help small and medium-sized enterprises access research and business development services at universities, colleges and other non-profit research institutions of their choice.
- $325 million over eight years to Sustainable Development Technology Canada to continue support for the development and demonstration of new, clean technologies.
- $20 million over two years to the Canada Revenue Agency to improve the predictability and enhance enforcement of the Scientific Research and Experimental Development tax incentive program.

Enhancing Canada’s Venture Capital System

- $60 million over five years to help outstanding and high-potential incubator and accelerator organizations expand their services to entrepreneurs.
- $100 million through the Business Development Bank of Canada to invest in firms graduating from business accelerators.
- Promoting an entrepreneurial culture in Canada through new Entrepreneurship Awards.
- $18 million over two years to the Canadian Youth Business Foundation to help young entrepreneurs grow their firms.

Source: http://www.budget.gc.ca/2013/doc/plan/chap3-4-eng.html#a0-Chapter-34-Investing-in-World-Class-Research-and-Innovation

FROM FEDERAL BUDGET 2012

Supporting Entrepreneurs, Innovators and World-Class Research

The global economy is increasingly competitive. The pace of technological change is creating new opportunities while making older business practices obsolete. To succeed and thrive in this environment, Canadian businesses need to innovate and create high-quality jobs. The Government has a strong record of support for research and development. But Canada can and must do better to promote innovation. The Government launched an Expert Panel in 2010 to
review federal support for research and development. Informed by the advice of the Panel, the Government is taking action toward a new approach to supporting innovation in Canada.

Economic Action Plan 2012 will:

- Increase funding for research and development by small and medium-sized companies.
- Promote linkages and collaborations, including funding internships and connecting private sector innovators to procurement opportunities in the federal government.
- Refocus the National Research Council on research that helps Canadian businesses develop innovative products and services.
- Enhance access to venture capital financing by high-growth companies so that they have the capital they need to create jobs and grow.
- Streamline and improve the Scientific Research and Experimental Development tax incentive program, including shifting from indirect tax incentives to more direct support for innovative private sector businesses.
- Support research, education and training with new funding for universities, granting councils and leading research institutions, such as Genome Canada.

Source: [http://www.budget.gc.ca/2012/plan/chap1-eng.html#a2](http://www.budget.gc.ca/2012/plan/chap1-eng.html#a2)

Highlights from Chapter 3.1:

Creating Value-Added Jobs Through Innovation

The Government is committed to a new approach to supporting innovation that focuses resources on private sector needs. Economic Action Plan 2012 proposes:

- $400 million to help increase private sector investments in early-stage risk capital, and to support the creation of large-scale venture capital funds led by the private sector.
- $100 million to the Business Development Bank of Canada to support its venture capital activities.
- $110 million per year to the National Research Council to double support to companies through the Industrial Research Assistance Program.
- $14 million over two years to double the Industrial Research and Development Internship program.
- $12 million per year to make the Business-Led Networks of Centres of Excellence program permanent.
- $105 million over two years to support forestry innovation and market development.
- $95 million over three years, starting in 2013–14, and $40 million per year thereafter to make the Canadian Innovation Commercialization Program permanent and to add a military procurement component.
- $67 million in 2012–13 as the National Research Council refocuses on business-led, industry-relevant research.
- Streamlining and improving the Scientific Research and Experimental Development tax incentive program.

Support for Research, Education and Training

The Government is committed to providing additional resources to support advanced research at universities and other leading research institutions. Economic Action Plan 2012 proposes:

- $37 million annually starting in 2012–13 to the granting councils to enhance their support for industry-academic research partnerships.
- $60 million for Genome Canada to launch a new applied research competition in the area of human health, and to sustain the Science and Technology Centres until 2014–15.
- $6.5 million over three years for a research project at McMaster University to evaluate team-based approaches to health care delivery.
- $17 million over two years to further advance the development of alternatives to existing isotope production technologies.
• $10 million over two years to the Canadian Institute for Advanced Research to link Canadians to global research networks.
• $500 million over five years, starting in 2014–15, to the Canada Foundation for Innovation to support advanced research infrastructure.
• $40 million over two years to support CANARIE’s operation of Canada’s ultra-high speed research network.
• $23 million over two years to Natural Resources Canada to enhance satellite data reception capacity.

Source: http://www.budget.gc.ca/2012/plan/chap3-1-eng.html#a4

FROM FEDERAL BUDGET MARCH 2011

DRIVING INNOVATION—CANADA’S DIGITAL ECONOMY STRATEGY

The Next Phase of Canada’s Economic Action Plan sets the stage for the Digital Economy Strategy to make Canada a leader in the creation, adoption and use of digital technologies and content. Budget 2011 measures include:

• Providing $80 million in new funding over three years through the Industrial Research Assistance Program to help small and medium-sized businesses accelerate their adoption of key information and communications technologies through collaborative projects with colleges.
• Announcing $60 million over the next three years to promote increased student enrolment in key disciplines related to the digital economy.
• Providing funding of $100 million per year to the Canada Media Fund for investments in the creation of digital content across multiple platforms.

STRENGTHENING CANADA’S RESEARCH ADVANTAGE

The Next Phase of Canada’s Economic Action Plan announces new resources to support leading-edge research, international collaborations, health research of national importance, and the creation of world-class research centres in Canada. Budget 2011 measures include:

• Investing an additional $37 million per year to support the three federal research granting councils.
• Providing an additional $10 million per year, for the Indirect Costs Program, for costs such as those related to operating and maintaining facilities.
• Investing $53.5 million over five years to support the creation of 10 new Canada Excellence Research Chairs.
• Allocating up to $100 million to help establish a Canada Brain Research Fund to support the very best Canadian neuroscience, and accelerate discoveries to improve the health and quality of life for Canadians who suffer from brain disorders.
• Providing an additional $65 million for Genome Canada to continue its groundbreaking work.
• Investing $4 million over three years to support the construction of a cyclotron for the production of medical isotopes at the Thunder Bay Regional Research Institute.
• Providing $35 million over five years to the Natural Sciences and Engineering Research Council of Canada to support excellence in climate and atmospheric research at Canadian post-secondary institutions.
• Providing $50 million over five years, beginning in 2012–13, to the Perimeter Institute for Theoretical Physics to support its leading research, education and public outreach activities.

FOSTERING COMMERCIALIZATION AND BUSINESS INNOVATION

The Next Phase of Canada’s Economic Action Plan supports the creation of high-value jobs with targeted resources to improve commercialization and support demonstration of new technologies in the marketplace. Budget 2011 measures include:

• Supporting 30 new Industrial Research Chairs at colleges with $3 million in 2011–12 and $5 million a year on a permanent basis starting in 2012–13.
Allocating $12 million over five years, starting in 2011–12, through the Idea to Innovation program to support joint college-university commercialization projects.

Providing $40 million over two years to Sustainable Development Technology Canada to continue to support the development and demonstration of new clean technology projects.

Supporting the operations of the National Optics Institute with $45 million over five years.


FROM FEDERAL BUDGET 2010

CREATING THE ECONOMY OF TOMORROW

In designing Canada's Economic Action Plan, the Government incorporated measures to help create the economy of tomorrow. In 2010–11, the Action Plan will invest almost $1.9 billion in post-secondary education, infrastructure, research, technology innovation, and environmental protection. This builds on 2009–10 investments of over $2.1 billion to support these strategic investments.

In 2010–11, the Government will provide $1 billion to support deferred maintenance, repair and construction at Canada's colleges and universities. This investment will help keep Canadian research and educational facilities at the forefront of scientific advancement and will help to ensure that high-paid jobs are maintained and created in Canada.

Funding to create the economy of tomorrow will also extend access to broadband Internet in remote communities, develop carbon capture and storage technology, and fund other strategic investments in science, technology and research.


CREATING ECONOMIC GROWTH AND JOBS THROUGH INNOVATION

Budget 2010 makes targeted changes to improve Canada’s productivity growth through innovation by:

- Providing $45 million over five years to establish a post-doctoral fellowship program to help attract the research leaders of tomorrow to Canada.
- Delivering $222 million in funding over five years to strengthen the world-leading research taking place at TRIUMF, Canada’s premier national laboratory for nuclear and particle physics research.
- Increasing the combined annual budgets of Canada’s research granting councils by an additional $32 million per year, plus an additional $8 million per year to the Indirect Costs of Research Program.
- Providing Genome Canada with an additional $75 million for genomics research.
- Doubling the budget of the College and Community Innovation Program with an additional $15 million per year.
- Providing $135 million over two years to the National Research Council Canada’s regional innovation clusters program.
- Providing $48 million over two years for research, development and application of medical isotopes.
- Providing a total of $497 million over five years to develop the RADARSAT Constellation Mission.
- Launching a new Small and Medium-sized Enterprise Innovation Commercialization Program with $40 million over two years.
- Renewing and making ongoing $49 million in annual funding for the regional development agencies to support innovation across Canada.

FROM FEDERAL BUDGET 2009

Further Developing a Highly Skilled Workforce…

….Allocating an additional $3.5 million over two years to offer an additional 600 graduate internships through the Industrial Research and Development Internship program launched in Budget 2007.

Investments in Knowledge Infrastructure

The Government will advance Canada’s knowledge advantage by:

- Dedicating up to $2 billion to repair, retrofit and expand facilities at post-secondary institutions.
- Providing $750 million for leading-edge research infrastructure through the Canada Foundation for Innovation.
- Providing $50 million to the Institute for Quantum Computing in Waterloo, Ontario to build a new world-class research facility.
- Allocating $87 million over the next two years to maintain or upgrade key Arctic research facilities.
- Providing $250 million over two years to address deferred maintenance at federal laboratories.
- Providing $500 million to Canada Health Infoway to encourage the greater use of electronic health records.
- Providing $225 million over three years to develop and implement a strategy on extending broadband coverage to unserved communities.


FROM FEDERAL BUDGET 2008

Strengthening Canada’s Tax Advantage

Budget 2008 builds on decisive and timely tax reductions for individuals, families and businesses introduced since 2006......

... Improvements to the scientific research and experimental development program

Investing in Knowledge

- $80 million per year to Canada’s three university granting councils for research.
- $15 million per year for the Indirect Costs of Research program.
- $140 million for Genome Canada.
- $250 million over five years for an Automotive Innovation Fund to support research and development investments in the automotive sector.

Chapter 5 of the Budget 2007 included a great amount of detail related to S&T, innovation and research. The following are the highlights of this chapter:

In the modern global economy, the most successful nations are those that best combine people, skills, new ideas and advanced technologies to create a competitive edge. Canada must be well positioned to succeed in this new environment. That's why we're making investments to create the best-educated, most-skilled and most flexible labour force in the world. Budget 2007 takes action on creating a Knowledge Advantage in Canada by:

- Investing an additional $800 million per year, beginning in 2008-09, for provinces and territories to strengthen the quality and competitiveness of Canada's post-secondary education system. Federal support will grow by 3 per cent every year thereafter.
- Helping graduate students cover the cost of their education with $35 million over two years and $27 million per year thereafter to support an additional 1,000 students through the Canada Graduate Scholarships. These scholarships will be dedicated to the memory of Canadians who have made a real and lasting impact in their respective fields: Sir Frederick Banting and Dr. Charles Best, Alexander Graham Bell, and Joseph-Armand Bombardier.
- In health-related studies, through the Canadian Institutes of Health Research.
- In natural sciences and engineering, through the Natural Sciences and Engineering Research Council of Canada.
- In the social sciences and humanities, through the Social Sciences and Humanities Research Council of Canada.

Making registered education savings plans (RESPs) more attractive by:

- Eliminating the $4,000 limit on annual contributions.
- Increasing the lifetime RESP contribution limit from $42,000 to $50,000.
- Increasing the maximum Canada Education Savings Grant annual amount from $400 to $500.

Providing $510 million to the Canada Foundation for Innovation to undertake another major competition before 2010. This will support the modernization of research infrastructure at Canadian universities, colleges, research hospitals and other non-profit research institutions.

Providing $120 million in 2006-07 to CANARIE Inc., a not-for-profit corporation that manages CA*net, a sophisticated research broadband network that links Canadian universities, research hospitals as well as other science facilities in other countries. This money will allow CANARIE to maintain the CA*net network for the next five years and to develop the next generation CA*net5.

Providing $10 million over the next two years to the Canadian Institute for Advanced Research to help Canadian students and researchers participate in and lead groundbreaking research on the international stage.

Providing $6 million in 2008-09 towards the relocation of Natural Resources Canada's CANMET Materials Technology Laboratory to the McMaster Innovation Park in Hamilton, Ontario.

Investing $85 million per year through the federal granting councils for research targeted on key priorities: health sciences, energy, the environment, information and communications technologies and management, business and finance.

Providing an additional $15 million per year to cover the indirect costs of research, including the operating and maintenance of research facilities.

Providing $500 million per year starting in 2008-09 to provide labour market training to help people who are not eligible for employment-insurance-related training get the skills they need and employers want. Any Canadian who needs training will be able to get training.

Supporting leading Centres of Excellence in Commercialization and Research with an investment of $350 million over 2006-07 and the next two years.

Providing Genome Canada with an additional $100 million in 2006-07 to extend promising research projects and sustain funding for regional genome centres and related technology platforms.
- Investing $30 million in The Rick Hansen Man in Motion Foundation in 2006-07 to translate research into practical benefits for Canadians living with spinal cord injuries.
- Extending and improving the Aboriginal Skills and Employment Partnership through the provision of an additional $105 million over five years.
- Improving the Temporary Foreign Worker Program with a $51-million investment over two years.
- Dedicating $34 million over the next two years to help Canadian-educated foreign students and skilled foreign workers stay in Canada as permanent residents.
- Creating the Foreign Credential Referral Office with a $13-million investment over two years.
- Providing $2 million over the next two years to launch a new international education marketing campaign to attract talented students to Canada.


FROM FEDERAL BUDGET 2006

Investing in Research and Development

Scientific research and technological development are essential for higher productivity and a rising standard of living. The Government of Canada’s support through the Indirect Costs of Research program and the three federal granting councils, as well as investments in leading-edge equipment and facilities through the Canada Foundation for Innovation, contributes to the training of highly skilled graduates, as well as to new discoveries that strengthen health care and help companies seize new business opportunities. These investments are significant, with the Indirect Costs of Research program receiving $260 million per year, and core funding for the three granting councils totalling close to $1.6 billion per year. The Government has also provided $3.65 billion to date to the Canada Foundation for Innovation in support of research infrastructure.

Building on these resources, Budget 2006 provides an additional $100 million per year as follows:

- $40 million per year for the Indirect Costs of Research program.
- $20 million per year for the Leaders Opportunity Fund of the Canada Foundation for Innovation.
- $17 million per year for the Canadian Institutes of Health Research.
- $17 million per year for the Natural Sciences and Engineering Research Council of Canada.
- $6 million per year for the Social Sciences and Humanities Research Council of Canada.

Over the coming year, the Minister of Industry will be developing a science and technology strategy, in collaboration with the Minister of Finance, that will encompass the broad range of government support for research, including knowledge infrastructure. The Government will also undertake a review of the accountability and value for money of the granting councils’ activities.

Source: http://fin.gc.ca/budget06/bp/bpc3b-eng.asp