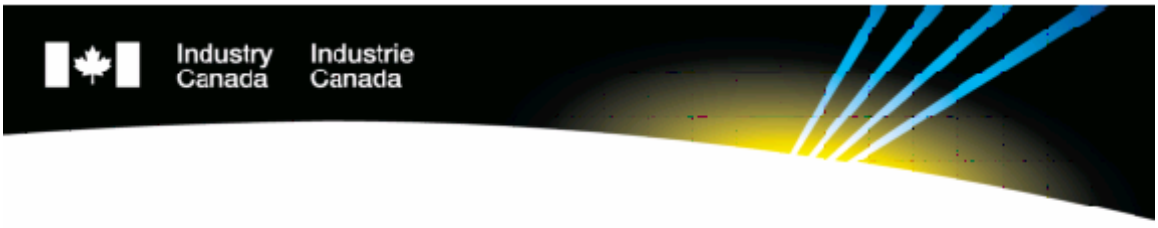

MID-TERM EVALUATION OF INDUSTRY CANADA'S SUSTAINABLE DEVELOPMENT STRATEGY, 2003-2006 (SDS III)

Prepared for

Audit and Evaluation Branch
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NOTE:

Minor editorial changes were made to this report in order to prepare the document for posting to the Industry Canada's Website (including removal of standard Appendices such as list of interviewees and questionnaires). Readers wishing to receive a copy of the original version of this report should contact the Audit and Evaluation Branch at Industry Canada.

Executive Summary

Industry Canada's next sustainable development strategy (SDS IV) must be tabled before Parliament by December 2006. This mid-term evaluation of SDS III is required by Industry Canada (IC) to contribute to the development of SDS IV and to assess the achievements to date of SDS III action items. This mid-term evaluation (which also includes an update on results from SDS II) is essentially a "formative" evaluation, focused on relevance of the initiative, delivery and achievement of targets, direct outputs from action items, short-term outcomes, constraints and lessons learned.

OBJECTIVES OF SDS III

SDS III has three strategic objectives:

- *Innovation towards sustainable development*: Continue to increase the commercialization and adoption of eco-efficient technologies.
- *Corporate and community sustainability*: Increase the use by industry, institutions and communities of corporate responsibility and sustainability practices.
- *Sustainable development capacity building within Industry Canada*: Enhance the capacity of Industry Canada's sustainable development management system.

The overall vision of SDS III reflects the department's mandate to help Canadians be more productive and competitive in the knowledge-based economy and thus improve their standard of living and quality of life. It also is in line with the view that sustainable development, along with productivity, employment and income growth, is an integral part of growing a dynamic economy.

EVALUATION QUESTIONS

The specific focus of the mid-term evaluation was on the following key research questions:

- What is the relevance of IC's SDS III to the government-wide sustainable development objectives?
- Is SDS III consistent with the department's mandate? How do the SDS III action items relate to IC's strategic objectives?
- To what extent is SDS III achieving its innovation towards sustainable development objective? What results is it achieving in increasing commercialization and adoption of eco-efficient tools and technologies?
- To what extent is SDS III achieving its corporate and community sustainability objective? What results is it achieving in increasing the use by industry, institutions and communities of corporate responsibility and sustainability practices?

- To what extent is SDS III achieving its IC capacity building objective? What results is it achieving in improving IC's SD management system, including the integration of sustainable development objectives into decision making, and the development and delivery of departmental policies, plans and operations?
- Have there been any unintended (positive or negative) impacts from SDS III?
- Are the SDS III initiatives cost-effective?
- What are the lessons learned from SDS III, based on factors that might have facilitated and/or impeded the implementation of the strategy?

FINDINGS

As with previous SD strategies, Industry Canada achieved a number of successful results and identified a number of opportunities for further improvement. Among the strengths identified through this study were the use of effective partnerships, the continuing development of a robust reporting and monitoring system, and a planning process that ensures the relevance of the strategy by design. Areas for improvement discovered, include more intra-departmental communication on SD challenges and successes, more focus on measurement frameworks and reporting – and in particular the use of appropriate indicators.

Update on Achievements of SDS II

- Based on progress reports from SDS II responsibility centres, the implementation of SDS II has been successfully completed. SDS II was seen by most IC persons interviewed for this evaluation as a successful progression from the previous SDS I experience.

- The final status of SDS II, since reported on in the previous mid-term evaluation, is that all action items were either completed successfully and concluded, or completed and carried into SDS III for continued and additional SD-related initiatives.

- SDS II received a favourable assessment on the Fall 2003 performance audit conducted by the Office of the Commissioner of the Environment and Sustainable Development on the eco-efficiency and environmental technologies strategic objectives.

- The findings on results of SDS II reported in the previous mid-term evaluation have been validated in interviews with SDS III responsibility centres.

- Industry Canada successfully integrated SD into its decision-making and planning processes during SDS II.

- During SDS II, the department has wisely used the tools and programs it has at its disposal, to achieve its targets in eco-efficiency, environmental technologies, and decision-making.

- The department has also become smarter (more effective) in collaborating and partnering with other government departments, provinces, municipalities, and private industry, non-profit organizations and associations – for SD-related activities.

- However, while the quality of discussion and expertise about SD within the department increased considerably during SDS II, the challenges of measuring mid- to long-term SD results are still quite significant.

Relevance of SDS III

- All Industry Canada's SDS III initiatives are relevant to the department and to government-wide SD goals, as described in *A Guide to Green Government* and in various *Speeches from the Throne* (1999, 2001, 2002, 2004), and the government's Budget statements (e.g., Budget 2005).

- In light of the Department's mandate to promote sustainable development, the department does have the opportunity to highlight the economic benefits of sustainable development by underscoring the links between SD and economic growth. In delivering its SD action items, the department does make the link between SD and the efficient and environmentally responsible use of economic resources, which also lead to an improved quality of life and wellbeing.

- In past SD initiatives the majority of SD action items made the strongest link with sustainable development through the department's innovation objective. This has been deemed to be one of the areas that the department can make a significant difference in SD. For example, of the 32 action items associated with SDS III, 21 are directly linked to "innovation". Most IC individuals consulted for this study, however, also believe that the department's contribution to SD has become relatively more diversified in scope across the department and across IC's other strategic objectives, compared to previous SD strategies. Nonetheless, there are advantages from pursuing an approach that focuses on those areas that make the most difference as Industry Canada has done in the past.

- SDS III initiatives are well integrated into the departments mandate and are linked to its strategic directions. The initiatives evolved through a process of internal consultation with IC staff and external consultations with stakeholders. An iterative process involving background research and discussions between IC management and staff, other government partners, and stakeholders led to the various targeted action items that make up the work agenda of SDS III. This process is seen by IC staff and management as reasonably rigorous, inclusive of differing points of view about how to tackle SD issues, and consistent with government-wide priorities. It is also seen, by IC staff and management, as having been responsive to private sector perspectives, in that an external scan of issues and consultation process formed an integral part of the process of defining the Strategy.

- IC's mandate, and its policies and programs, and SD initiatives are mutually reinforcing. IC and sustainable development are compatible, in that the department has an important role in ensuring that the government contributes to balanced decision making among economic, environmental and social dimensions of SD. This point is consistently confirmed or supported by those who were consulted within IC for this mid-term evaluation.

- While Industry Canada is not an environmental department per se, its mandate is compatible with the goals of sustainable development. Sustainable development is not just the protection of the environment. It includes the efficient and environmentally responsible use of all of Canada's resources—natural, human

and economic. A healthy economy is seen by representatives within IC as one that stimulates job growth and wealth but in a way that ensures a high quality of life and a healthy environment.

Results of SDS III: Achieving Innovation Towards Sustainable Development

- Sixteen action items fall under Industry Canada's innovation towards sustainable development objective. Five action items are related to "capacity building in R&D and skills". Five action items fall under "promoting technology innovation", while six action items relate to "applying tools in the marketplace".

- IC has undertaken a broad range of activities in order to complete the innovation towards sustainable development objective. Out of 16 action items, the department is near fulfilling, has fulfilled, or exceeded requirements[1] of 9 items, and is making good progress (at "mid-point") towards completing another 5. Two action items were reported to be at an "early implementation" phase but have nonetheless achieved several laudable results.

- Key mid-term results related to the achieving innovation towards sustainable development are listed below. Other results are discussed in the report.

    - The Canadian Foundation for Innovation (CFI) has been highly successful in leveraging matching funds in several capacity-building projects that contribute to SD research and development on SD technologies. Some of these projects have targeted industrial waste, facilities for geomatics and sustainability, and national and regional "knowledge clusters"; and CFI has helped to attract highly qualified researchers, postdoctoral fellows and students in SD-related disciplines.

    - IC support to five Networks of Centres of Excellence contributed to development of SD-related technologies/processes in automotive R&D, aquacultures, water quality, sustainable forest management, and impacts of climate change in the North.

    - Developing Technology Roadmaps and establishing R&D networks is the tool used by IC to contribute to advancing the bio-based economy. This tool has proved effective in leveraging resources and promoting SD initiatives. The reach of these initiatives for SD-related initiatives was measured by IC, achieving over 2,000 Canadian researchers and private sector stakeholders, and over 50 Canadian companies.

    - During 2003-05 Technology Partnerships Canada has funded 23 projects with SD-related potential such as: fuel-cell technologies, energy-efficient turbines, recycling of steelmaking dust, more efficient paper making, water filtration, integrated waste hydrogen utilization, and others. TPC is highly successful in leveraging matching funds. TPC SD contributions during 2003-05 amounted to over $320 million, leveraging some additional $784 million from private and other sources.

[1] These action items are reported as being in a "late implementation phase", "completed" or "ongoing", and most or all of their intended activities have been accomplished.

- Several SD-related projects were also completed with IC's support to Precarn (Pre-Competitive Applied Research Network). Precarn is a national, member-owned industrial consortium supporting the development of intelligent systems technologies. During 2003-05 Precarn funded, coordinated and promoted several collaborative SD-related research projects conducted by industry, university and government researchers. Strong partnerships developed from these projects that have contributed to advancing the commercialization of SD-technologies for marketplace relevance.

- IC has contributed to the development of a Memorandum of Understanding between government and the auto-industry, promoting a 25-percent increase in new vehicle fuel efficiency. This MOU with automotive assemblers was signed in 2005, bringing the auto industry on board. The federal government is now monitoring the MOU to assess its impacts. The auto industry has agreed to offer fuel-saving vehicle technologies to reduce GHG emission reductions by 5.3 megatons annually by 2010.

- IC has acted as a catalyst for the development of several SD-related Technology Roadmaps during 2003-05: for clean coal, biopharmaceuticals, CO2 capture and geological storage, and aerospace competitive intelligence. Industry has responded to these initiatives, driving the development of the roadmaps and collaborating on several pertinent projects.

- During 2003-05 IC has sponsored and/or participated in international workshops and trade missions to promote Canadian climate change technologies and services, which have contributed to increasing opportunities for Canadian companies to meet foreign buyers and governments interested in their technologies and climate change projects. This included outreach initiatives involving China, India, Mexico and Europe, and involved hundreds of Canadian companies indicating increased foreign commercial opportunities.

Results of SDS III: Achieving Corporate and Community Sustainability

- Ten action items fall under Industry Canada's corporate and community sustainability objective. Six action items are related to "promoting corporate responsibility and sustainability". Four action items fall under "advancing local and global sustainability".

- The department has undertaken a broad range of activities in order to complete the corporate and community sustainability objective. Out of 10 action items, the department is near fulfilling, has fulfilled, or exceeded requirements[2] connected to 7 items, and is making good progress (at "mid-point") towards completing another 2. One action item is reported to be in an "early implementation" phase (although several results associated with this action item have already been achieved) and should be considered for inclusion in SDS IV.

[2] These action items are reported as being in a "late implementation phase", "completed" or "ongoing", and most or all of their intended activities have been accomplished.

- Key mid-term results related to the corporate and community sustainability objective of SDS III are listed below. Other results are discussed in the report.

    - IC is providing positive collaborative expertise, working with other government departments to develop policy frameworks across a number of SD-related issues, including changing the regulatory regime to ensure SD and industrial competitiveness and growth are considered, contributing to energy demand-side management savings, and participating in a number of inter-departmental climate change and funding initiatives.

    - It is reasonable to say that increased awareness of industrial sustainability was achieved among Canadian public, industry and government officials as a consequence of IC's activities to broaden Corporate Social Responsibility (CSR).

    - IC is active in several CSR initiatives, developing and making available tools for self-assessment of CSR capacity, diagnosing CSR challenges, determining best practices, and prescribing solutions. IC is also active in developing CSR guidance standards and management systems.

    - According to expert feedback from within the department, the quantity and quality of CSR reporting is said to have increased as a result of IC's role in improving this accountability requirement. The credibility of corporate sustainability reporting has increased.

    - IC officials have been very active in establishing and contributing to inter-governmental and stakeholder electronic recycling networks that are now contributing to establishing standards and provincial regulations for e-waste recycling.

    - The Computers for Schools program, a highly successful voluntary program, addressing a serious industry gap, has gained considerable momentum over the past decade. Over 1.3 million computers have been managed for re-use or recycling; and tens of thousands of other pieces of peripheral equipment. This equates to the diversion of an estimated 60,000 tons of material from Canadian landfill sites.

    - The Sustainable Cities Initiative successfully evolved from a pilot project to a $15 million program covering 16 cities, 7 of which came on board during SDS III (from 2003 to the present). It is estimated that in excess of 1,500 individuals and 850 organizations (stakeholders and partners) are actively working in 16 cities in 14 countries as a result of SCI. Key informants report several successes in achieving Canadian stakeholder participation in SCI projects.

Results of SDS III: Achieving IC's Capacity Building Objective

- Six action items fall under Industry Canada's capacity building objective. All these action items contribute to the intended outcome of "improving sustainable development planning, performance measurement, and evaluation".

- The department is near fulfilling, has fulfilled, or exceeded requirements[3] associated with all 6 action items.

- Key mid-term results related to the capacity building objective of SDS III are listed below. Other results are discussed in the report.

    - Progress towards integrating SD into the department's strategic planning and reporting frameworks has been substantial. SD plans and reports have been fully integrated into the latest rounds of RPP and DPR reports and processes.

    - Employee feedback and participation in greening operations is very positive, and supportive of the initiatives. Several initiatives during 2003-05 were launched, with a good level of participation.

    - SDS evaluation initiatives are all on track, meeting the requirements of accountability and contribution to planning and management of the department's SD strategies. SD considerations are included in RMAFs and SDS III RMAF is completed.

    - IC staff and management appear to be well-briefed on SD issues, the role of Industry Canada in contributing to the federal SD agenda, and the department's responsibilities towards its stakeholders and Canada's international obligations.

    - The presence and participation of SD champions within the department has provided a high profile for SD within the context of IC's mandate and related activities. Four ADM champions were appointed for outreach to industry, greening operations, and SDS implementation and monitoring.

    - According to interviews with managers and professional staff at IC, the department's SD web site continues to be robust and contributes to dissemination of relevant information within and outside the department (based on the number of website "hits", for example: an increase from 23,379 hits in 2004 to 25,670 hits in 2005).

    - Several training and awareness initiatives on SD have been delivered to IC staff, in well-attended sessions (while overall attendance numbers were not specifically quoted in monitoring reports, anecdotal evidence from interviewees suggest that the sessions were well-attended).

Other Evaluation Findings

- **Cost-effectiveness—**Analysis of SDS III cost estimates and interviews with responsibility centres suggest that SDS III has been a very cost-effective delivery model for IC.

[3] These action items are reported as being in a "late implementation phase", "completed" or "ongoing", and most or all of their intended activities have been accomplished.

- **Reporting system—**IC's accountability reporting system for SDS III has substantially improved from previous SD strategies. The new monitoring system implemented during SDS III has allowed for a more systematic approach, enabling IC officials to effectively roll-up results and provide both succinct and comprehensive performance reports on targets and activities to the Deputy Minister. Unlike previous evaluations (SDS I and SDS II), none of the SDS III responsibility centres interviewed identified any substantial issues with the reporting system.

- The SD website has evolved into a robust vehicle for information dissemination on sustainable development, both for the public, for industry, and for updates and information sharing within the department itself.

- The department was also able to effectively report on SDS III progress in its most recent DPR for the period ending March 31, 2005. It was also further able to provide more detailed SDS III results on performance information by posting the progress of its 32 action items on the web (strategis.gc.ca/sd), thereby fulfilling a commitment it made in the 2002-03 DPR to provide more comprehensive performance information to the public.

LESSONS LEARNED AND RECOMMENDATIONS

- **Making progress—**Industry Canada has substantially progressed since SDS I and SDS II in focusing its sustainable development agenda around outcomes relevant to the department's mandate. SDS III consolidated various SD initiatives underway within the department into 32 action items focused around three key objectives of the strategy: achieving innovation towards sustainable development; achieving corporate and community sustainability; and achieving SD capacity building within the department. ***Recommendation:*** *Industry Canada should ensure that SDS IV action items remain at a manageable optimum number, building on the lesson learned from SDS III, which consolidated action items from 58 in SDS II to 32.*

- **Intra-departmental dialogue—**SDS III is a success in that it has been implemented horizontally across the department, in a distributed management model (i.e., a "whole of department" approach). Intra-departmental sharing of responsibilities for components of action items was a strong point of the implementation process. Reporting mechanisms and online access to information via the SD website were also substantially improved from previous SD strategies, enabling intra-departmental interaction and information sharing. Lack of occasional face-to-face dialogue across SDS III responsibility centres from different branches, however, was highlighted by some responsibility centres as a gap in the implementation strategy. ***Recommendation:*** *To encourage a more "people-centric" approach during SDS IV, it is recommended that SDS IV organizers initiate periodic seminars (perhaps once a year) to engage participants and responsibility centres to share their results, and to benefit from the synergies of inter-disciplinary and professional dialogue.*

- **Reporting—**While Industry Canada's SD reporting system has substantially improved from previous SD strategies, the reporting system could benefit from a cumulative end-of-project report for each action item. ***Recommendation:*** *Once*

an action item has been completed, the responsibility centre should prepare a cumulative report that addresses the key metrics of performance and the expected outcomes from that item.

- **Partnerships—**An opportunity exists for establishing greater consistency between an SD strategy and the needs of IC's stakeholders, by increasing the level of meaningful interaction with the private sector and other stakeholders, throughout the strategy period. The first strategies (SDS I and II) established an interactive consultation process with external stakeholders early in the design stage, with some interactions during the lifetime of the strategy.

  SDS III has improved the level of interaction with external stakeholders by establishing or participating in consultative processes and mechanisms throughout the life of the strategy. The department's interaction and teamwork with the private sector and other stakeholders has been an ongoing participatory process, resulting in spin-off benefits for SD activities and initiatives outside the department's sphere. ***Recommendation:*** *Industry Canada should continue to build on the positive impacts of its partnerships, forged through SD action items, to advance sustainable development.*

- **Anticipating the Requirements of a Cumulative Evaluation of SDS I, II, and III—**The recent RMAF study for IC's SDS initiatives (March 2005) recommended that a summative evaluation include case studies as an approach to address the challenge of measuring SD strategy results, e.g., case studies of Precarn-funded projects, sustainable cities, greening operations, sustainable manufacturing, corporate sustainability reporting, technology roadmaps, and recycling computers. ***Recommendation:*** *Systematically build an inventory of narratives on success-stories and case studies, identifying lessons learned and best-practices from SDS action items.*

I. Introduction

This report presents the results of a mid-term evaluation of Industry Canada's third Sustainable Development Strategy (SDS III) for the period from 2003 to 2006. Industry Canada commissioned Bytown Consulting to undertake this evaluation study of SDS III.[4]

1.1 Context

Definition of sustainable development—The World Commission on Environment and Development (the Brundtland Commission) defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This definition provides a framework for the integration of environmental policies and development strategies. The Government of Canada is committed to sustainable development as a way to improve our quality of life. Sustainable development has been integrated into the *Auditor General Act* and federal departments are required to produce sustainable development strategies every three years.

Sustainable development strategies in the federal government—In 1997, 28 federal government departments and agencies tabled their first sustainable development strategies in the House of Commons. The general objective of these strategies was to operationalize sustainable development, to move it from a concept to a practice by articulating what needed to be done by federal government departments.

The various federal government departments' SD initiatives have to satisfy a number of government-wide strategic directions, including those articulated in the government's *A Guide to Green Government* and in various government Throne Speeches.

Industry Canada's sustainable development strategies—According to the *Department of Industry Act*, one of the duties of the Minister of Industry is to "strengthen the national economy and *promote sustainable development* … ". Industry Canada is now in the process of developing its fourth Sustainable Development Strategy (SDS IV), 2006-2009. Since 1997, Industry Canada has been involved in three SDS strategies, as follows.

- SDS I (1997-2000) was designed to build sustainable development into departmental activities and to be effectively aligned with the objectives of the department's overall business plan. SDS I focused on learning and discovery.

- SDS II (2000-2003) aimed to provide leadership in sustainable development, form effective partnerships and be more proactive in select strategic areas where significant results are possible. This strategy focused on leadership, partnership,

4 This report also provides an update on SDS II objectives achieved, and a validation of findings from the previous evaluation of SDS II: *Mid-Term Evaluation Study of Industry Canada's Sustainable Development Strategy (SDS II)*, prepared by Bytown Consulting and KPMG Consulting, for Industry Canada, July 3, 2003.

being more proactive and focused, and placing more emphasis on strengthening management practices.

- SDS III (2003-2006) was intended to address the needs of a growing, competitive and innovative Canadian economy; and to contribute to Canada's leadership in developing, commercializing and adopting SD tools, practices, and technologies.

- SDS IV (2006-2009) is in a developmental phase and will be tabled in the House of Commons in December 2006.

Context for mid-term evaluation of SDS III—This mid-term evaluation study is part of a process for helping to develop the next sustainable development strategy of the department (SDS IV) for 2006-2009. Two other studies have also been commissioned as part of this process: an "internal issues scan" (based on assessments of managers and professionals within the department), and an "external issues scan" (based on assessments of stakeholders and clients of the department). Both the internal and external issues scans are aimed at identifying relevant sustainable development issues that the department could address over the next three years.

An Industry Canada SDS *Results-based Management and Accountability Framework* (RMAF) was prepared and finalized in March 14, 2005 as a precursor to this current (2006) mid-term evaluation of SDS III. Previously, evaluations of SDS I and SDS II were completed, to report on the near and mid-term results of those past two initiatives (see references in Appendix A).

1.2 Objectives and Evaluation Questions

Objective—This mid-term evaluation of SDS III is required by Industry Canada to contribute to the development of SDS IV, and to assess the achievements to date of SDS III action items. This mid-term evaluation (which also includes an update of results from SDS II) is essentially a "formative" evaluation, focused on relevance of the initiative, delivery and achievement of targets, direct outputs from action items, short-term outcomes, and lessons learned.

Evaluation questions— The RMAF for Industry Canada's SDS III (March 14, 2005) identified the main research questions to address for the mid-term evaluation of SDS III, as follows:

- What is the relevance of IC's SDS III to the government-wide sustainable development objectives?

- Is SDS III consistent with the department's mandate? How do the SDS III action items relate to IC's strategic objectives?

- To what extent is SDS III achieving its innovation towards sustainable development objective? What results is it achieving in increasing commercialization and adoption of eco-efficient tools and technologies?

- To what extent is SDS III achieving its corporate and community sustainability objective? What results is it achieving in increasing the use by industry, institutions and communities of corporate responsibility and sustainability practices?

- To what extent is SDS III achieving its IC capacity building objective? What results is it achieving in improving IC's SD management system, including the integration of sustainable development objectives into decision making, and the development and delivery of departmental policies, plans and operations?

- Have there been any unintended (positive or negative) impacts from SDS III?

- Are the SDS III initiatives cost-effective?

- What are the lessons learned from SDS III, based on factors that might have facilitated and/or impeded the implementation of the strategy?

1.3 Approach

Document review—As part of the approach for this mid-term evaluation, a review of relevant documents was done. Documents reviewed include previous departmental evaluations of sustainable development initiatives; progress reports; internal and external issues scans; SDS I, SDS II and SDS III strategy documents; relevant reports of the Commissioner of the Environment and Sustainable Development; IC senior management presentations and memos on departmental SD activities; and ad hoc reports and documents associated with individual SDS III action items. Appendix A provides a list of references reviewed for this study.

Consultations—In addition, the approach for this study involved a series of interviews with 32 management and professional staff members of Industry Canada plus 5 external IC stakeholders from outside the department (see the interview guides in Appendix B and the list of persons consulted in Appendix D). In addition, relevant results of interviews for the "internal issues scan" study were blended with the interview findings for the mid-term evaluation.

Review of SDS III departmental monitoring and reporting database—In order to assess the status of various SDS III action items, various progress reports, and related information included in the SDS III departmental monitoring and reporting database, were examined. The nature and extent of information gaps were identified, and monitoring and reporting results were assessed.

Analysis and reporting of results—The information gathered was analyzed in the context of each of the research questions identified above. The evaluation approach was developed in the SDS III RMAF report prepared as a precursor to this mid-term evaluation. The RMAF report forms the basis for the analysis and reporting of results.

1.4 Scope of the Evaluation

The scope of this study is limited to a review of the near-term results achieved to date by SDS III, and to identifying lessons learned and implementation challenges to be addressed for the next phase of IC's sustainable development initiatives. As a formative, mid-term evaluation this study does not tackle issues related to long-term impacts of Industry Canada's SDS III, and the ultimate achievement of its SD vision. These and other topics will be addressed more comprehensively in a summative evaluation of IC's SDS strategies, likely to be conducted in 2007.

II. Update on Results of SDS II

Before presenting the findings of the mid-term evaluation of SDS III, this chapter first provides an update on the results of SDS II. This update presents results from action items completed towards achieving SDS II objectives, and a validation of findings of the previous SDS II mid-term evaluation (completed in July 2003).[5]

2.1 Profile of SDS II

In its second Sustainable Development Strategy (SDS II), Industry Canada committed to promoting sustainable development as part of its mandate to create the foundation for a more productive, competitive, knowledge-based economy.

Industry Canada's SDS II consisted of three objectives that focused on eco-efficiency, environmental technologies, and decision making. Exhibit 1 identifies the vision of the strategy, and the objectives and targeted areas for action.

The overall vision of SDS II was aligned with Industry Canada's mandate to create the foundation for a more productive, competitive, knowledge-based economy. The following were the overall strategic objectives of SDS II:

- *Eco-efficiency:* Enhance the capacity of Canadians, industries and firms to develop and use eco-efficient practices, tools, technologies and products that contribute to increased productivity and environmental performance.

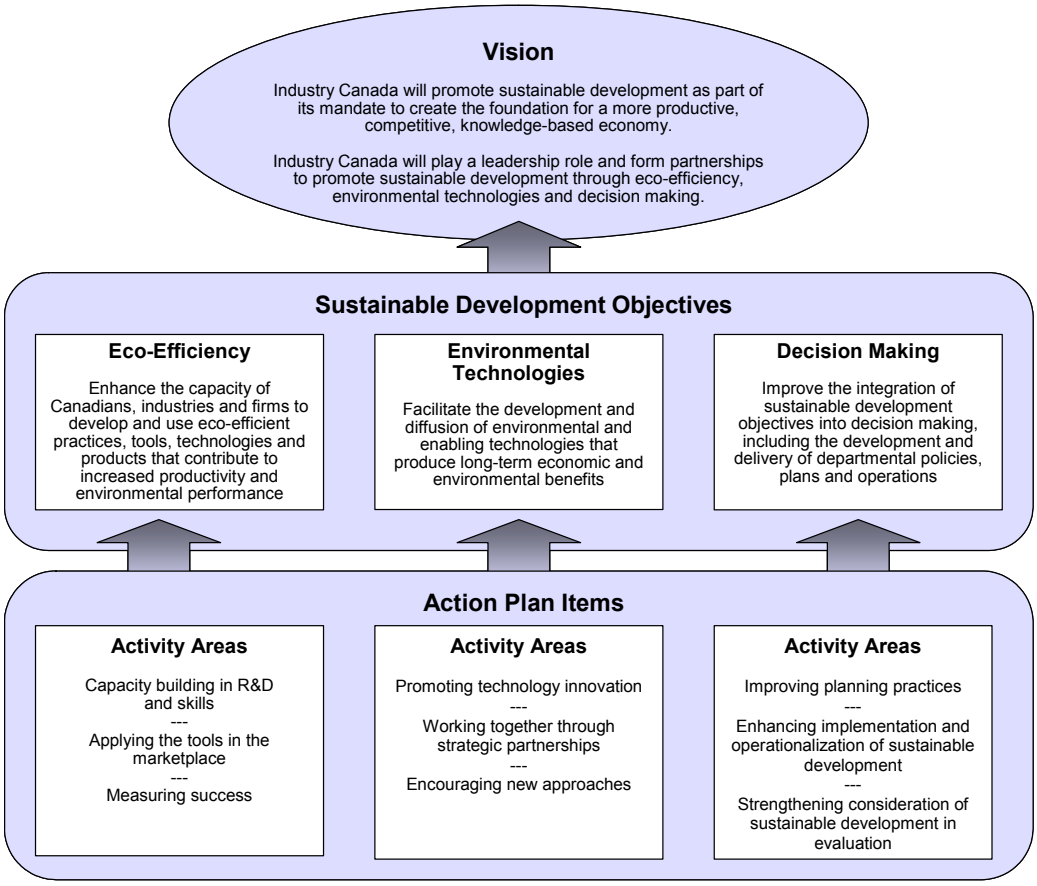
- *Environmental technologies:* Facilitate the development and diffusion of environmental and enabling technologies that produce long-term economic and environmental benefits.

- *Decision-making:* Improve the integration of sustainable development objectives into the decision-making and delivery of departmental policies, plans, programs and operations.

Within these strategic objectives, the department established nine priority activity areas (Exhibit 1) to play a leadership role and promote sustainable development.

[5] *Mid-Term Evaluation Study of Industry Canada's Sustainable Development Strategy (SDS II)*, prepared by Bytown Consulting and KPMG Consulting, for Industry Canada, July 2003.

Exhibit 1: Profile of SDS II



2.2 Update on Achievement of Objectives of SDS II

As part of this current mid-term evaluation of SDS III, interviewees within Industry Canada were asked the following questions to update and validate the results of the previous mid-term evaluation of SDS II.

- **Success of SDS II—** How successful was the department in achieving its overall SDS II objectives?
- **Results of SDS II—** What were the results achieved by the action items you were responsible for, or participated in, during SDS II?
- **Reporting on SDS II—** How successful was Industry Canada in capturing (identifying/measuring) these results, and reporting on them (e.g., in evaluation and/or other reports)?

Success of SDS II—Based on progress reports from SDS II responsibility centres, on the SD action items, the implementation of SDS II has been successfully completed. SDS II was seen by most IC persons interviewed for this evaluation as a successful progression from the previous SDS I experience.

The mid-term evaluation study of SDS II reported on the results of the strategy as of July 2003. At that time, out of 58 action items, the department had fulfilled, or exceeded, requirements connected with 34 items, and was making good progress towards completing another 16 items. Another 8 action items were reported to be in a planning or early implementation phase and were likely to be rolled into SDS III.

The final status of SDS II, since reporting in the previous mid-term evaluation report, is that all action items were either completed successfully and concluded, or completed and carried into SDS III for continued and additional SD-related initiatives. Those action items that were carried into SDS III include: Technology Partnership Canada, Sustainable Cities Initiative, Technology Roadmaps, Precarn, Recycling Computers and Telecommunications Equipment, Corporate Social Responsibility, and Greening Operations.

The majority of officials interviewed from several branches of IC felt that they had achieved their SDS II targets. Generally, they also felt that the department achieved its objectives for SDS II, making the strongest link with sustainability through its innovation and marketplace objectives.

Many of the 58 action items of SDS II were tracked and reported on at different levels within the department. Presentations on the progress and final results were made at policy committee meetings and at the ADM level. As a result, SDS II had significant profile within the department – more so than the previous SDS I.

SDS II received a favourable assessment on the Fall 2003 performance audit conducted by the Office of the Commissioner of the Environment and Sustainable Development (CESD) on the eco-efficiency and environmental technologies strategic objectives. The CESD's report noted that "Industry Canada is making a serious effort in the area of sustainable development …".

Results of SDS II—Results reported in the SDS II mid-term evaluation study focused on the extent to which short and near-term objectives of the strategy were achieved, to the year 2003. The reporting on results by the evaluation study focused on project deliverables, outputs and near-term outcomes of the strategy. The findings of the mid-term evaluation of SDS II have been validated in interviews with SDS III responsibility centres. Industry Canada successfully integrated SD into its decision-making and planning processes during SDS II. The department also became smarter (more effective) in collaborating and partnering with other government departments, provinces, municipalities, and private industry, non-profit organizations and associations – for SD-related activities. However, while the quality of discussion and expertise about SD within the department increased considerably during SDS II, the challenges of measuring mid- and long-term SD results are still quite significant.

During SDS II, the department has wisely used the tools and programs it has at its disposal, to achieve its targets in eco-efficiency, environmental technologies, and decision-making. Interviewees for this current mid-term evaluation of SDS III were able to provide validation of the achievements of SDS II in relation to that strategy's objectives. Exhibit 2 provides a summary of results of SDS II reported in the final progress report to the Senior ADM Policy Sector.

Exhibit 2: SDS II Mid-term Evaluation Update -- Highlights

SDS II Strategic Objectives	Update on Additional SDS II Results Achieved since the Mid-term Evaluation Report of July 2003—Highlights
Eco-efficiency: Enhance the capacity of Canadians, industries and firms to develop and use eco-efficient practices, tools, technologies and products that contribute to increased productivity and environmental performance.	Provided advice on the development of the joint Ministerial letter from Ministers Rock, Anderson, Graham and Pettigrew and press release to TSX 300 CEOs announcing the new on-line Sustainability Reporting Toolkit (which IC jointly developed and funded with EC, DFAIT and Stratos Inc.) Two voluntary initiatives have been developed and signed: Canadian Chemical Producers Association MOU and the Automotive Parts Manufacturers Association Environmental Performance Agreement. Continued to participate in the Government Advisory Panel of the Voluntary Climate Change Environmental Management Plan and the Environmental Steering Group of the Canadian Chemical Producers Association. Undertook an on-line survey of the Canadian Environmental Solutions (CES) web site to evaluate all aspects of the site, including overall user impressions and user intentions regarding how the information received is then used.
Environmental technologies: Facilitate the development and diffusion of environmental and enabling technologies that produce long-term economic and environmental benefits.	Technology Partnerships Canada invested $9.6 M in one project that is expected to contribute to sustainable development, and lever approximately $22.4 M in private sector investment. Minister Rock announced funding for six fuel cells demonstration projects to be administered by Fuel Cells Canada, with assistance from the Government of British Columbia. Canada Foundation for Innovation funded 73 projects at a cost of$9.6 M between April and September 2003. These were targeted in the fields of general environmental protection, protection of species and habitats, renewable energy sources, forestry, pollution and protection of the environment, renewable resource technology, the protection of soil & groundwater, and research for the protection of seas, oceans and the atmosphere. Completed two Technology Roadmaps: (1) the Fuel Cells Technology Roadmap (April 2003); and (2) the Intelligent Buildings Technology Roadmap (June 2003). The release of the Fuel Cells Technology Roadmap was announced by Minister Rock. The Technology Roadmap on Sustainable Fuels and Chemicals from Biomass has advanced to the final stages of information gathering and analysis, and the final report is expected in February 2004. *Hydrogen on the Hill*: Ford Canada with financial assistance from Industry Canada made a presentation on Parliament Hill, which proposed a demonstration project under which Hydrogen-run passenger vehicles would be used on the Hill. Environmental Affairs Branch coordinated the Industry Portfolio input to the interdepartmental implementation of specific components of the *Climate Change Plan for Canada*. The following international business competitive analyses were prepared: analytical and decision-making framework for competitive analysis; an environment industry competitiveness analysis; and an analysis of environmental merchandise export trends. Four companies applied for TPC funding for the development and commercialization of PEM and SOFC Fuel Cell Power units for stationary and mobile applications.
Decision-making: Improve the integration of sustainable development objectives into the decision-making and delivery of departmental policies, plans, programs and operations.	Delivered an SD training course in June 2003, and an SD module in IC's Advanced Policy Course in October 2003. Several pilot projects are underway to improve IC's green procurement practices as well as on the existing recycling program, which include: selecting green accommodation when travelling, converting existing printers to support double sided printing, purchase of recycled toner cartridges, improving the ink jet cartridge and battery recycling process. Work is also being done at the regional level aimed at identifying and providing information tools customized to their needs. Completed the first phase of the project related to developing an R&D driven endogenous growth model for Canada. The paper was presented in national and international conferences. Prepared and distributed seven Enviro-Notes throughout the department. Strategic Policy Branch partnered with Energy & Marine Branch to set up an SD information table during Environment Week in June 2003 to promote IC's SD agenda.

Reporting on SDS II—IC was one of four departments recognized in 2002 by the Commissioner of the Environment and Sustainable Development with a Level I ranking for its SDS II management and reporting system. The July 2003 mid-term evaluation of SDS II was part of a process for helping to develop SDS III. Two other studies were also commissioned by Industry Canada as part of this process: an "internal issues scan" (based on assessments of managers and professionals within the department), and an "external issues scan" (based on assessments of external stakeholders and clients of the department). Both these issues scans helped identify key SD opportunities that the department targeted for SDS III. The lessons learned on reporting on SDS II results, and target achievements, contributed to the development of more focused and effective performance indicators to measure progress and results of SDS III (see Chapter VI, Section 6.2).

A new reporting scheme for SDS III was developed. The current mid-term evaluation of SDS III found that the new reporting scheme has been successful in that it simplified the reporting process at the grassroots levels, enabling a rolling up of results for transparency and for management monitoring and accountability.

III. Profile of SDS III

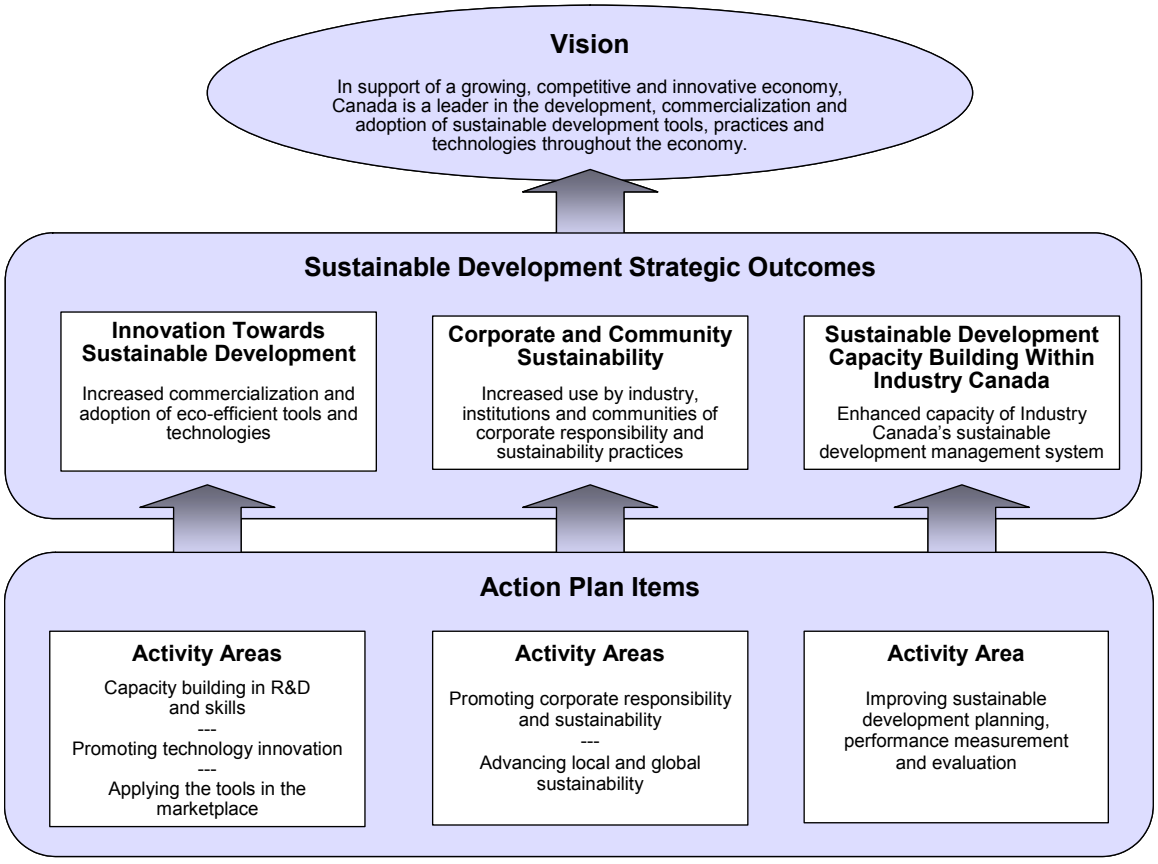
This chapter of the report presents a profile and a logic model for SDS III. The logic model depicts plausible linkages between the activities of SDS III and the anticipated results of the strategy.[6] The issues that SDS III is expected to impact are also identified in this chapter.

3.1 SDS III Vision

In tabling its third round of sustainable development strategies, Industry Canada was building on and renewing the commitment to a more sustainable economic, environmental and social future for Canada.

Exhibit 3 identifies the vision of the third strategy (SDS III), including the objectives and targeted areas for action.

Exhibit 3: Profile of SDS III



[6] The profile and logic model are consistent with what was presented in Industry Canada's *SDS Results-based Management and Accountability Framework*, prepared for Audit and Evaluation Division, March 14, 2005.

SDS III identified three strategic outcomes:

- *Innovation towards sustainable development*: Continue to increase the commercialization and adoption of eco-efficient technologies.
- *Corporate and community sustainability*: Increase the use by industry, institutions and communities of corporate responsibility and sustainability practices.
- *Sustainable development capacity building within Industry Canada*: Enhance the capacity of Industry Canada's sustainable development management system.

The overall vision of SDS III reflects the department's mandate to help Canadians be more productive and competitive in the knowledge-based economy and thus improve their standard of living and quality of life. It also is in line with the view that sustainable development, along with productivity, employment and income growth, is an integral part of growing a dynamic economy.

Within the three strategic outcomes, the department established six priority activity areas (Exhibit 3) to promote sustainable development through innovation and results.

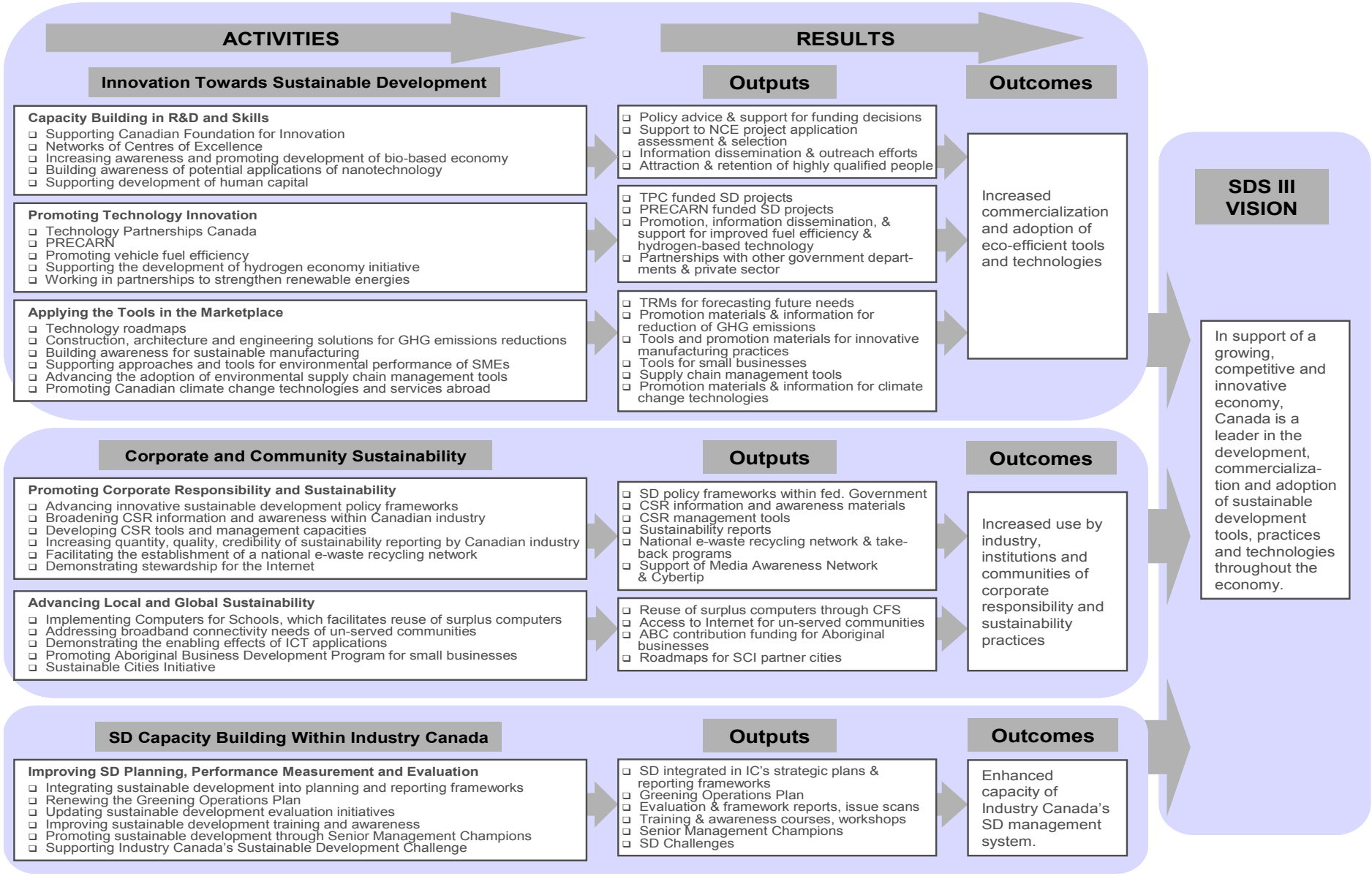
3.2 SDS III Logic Model

The linkages between Industry Canada's SDS III activities and the results from these activities are identified in Exhibit 4. In order to understand the issues that need to be evaluated and the approach for the evaluation, it is helpful to first identify the logical linkages (the "results chain") between priority activity areas, outputs and the outcomes associated with the deployment of SDS III. [7]

Exhibit 4 shows how the activities of SDS III are expected to lead to the accomplishment of the strategy's objectives. This "logic model" depicts the results chain expected to occur, and links the strategy's major activities to the expected outcomes and impacts, and to the ultimate achievement of the vision. "Outputs" are the products or services generated by the activities; and they provide evidence that the activity did occur. "Outcomes" typically have an action word associated with it (e.g., "increased", "improved") and represent the consequences of the activities and outputs. Final outcomes are generally outcomes that relate to the vision associated with the initiative. They take a long time to be realized, and are often subject to external influences beyond the initiative itself. The causal relationships shown in Exhibit 4 are plausible enough to allow for a meaningful evaluation to be done, particularly focusing on the short-term or near-term results expected.

[7] The results-based depiction of SDS III in Exhibit 4 is consistent with Treasury Board of Canada's *Guide for the Development of Results-based Management and Accountability Frameworks*. It is also consistent with "Exhibit 5.3: The results chain: From activities to outcomes", in *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*, Office of the Auditor General, Ottawa, 2002, page 9.

Exhibit 4: Results Chain and Logic Chart for Industry Canada's SDS III



3.3 Action Items and Issues that SDS III is Expected to Impact

Several SD issues were identified by the internal and external issues scans undertaken for the department in preparation for the development of SDS III. To address these issues, thirty-two action items were planned and implemented across the department. Exhibit 5 identifies these action items and the corresponding issues they are expected to address (as reported in *Industry Canada: Sustainable Development Strategy 2003-06*).

The results from each of the individual action items will be addressed later in this report. To begin with, however, at least as listed it is clear from Exhibit 5 that the thirty-two action items is a robust set of activities focused on relevant issues consistent with the department's plan. At least twenty-three responsibility centres from across all sectors of the department, jointly or individually, were responsible for delivering these action items. These responsibility centres are listed by action item in the last column in Exhibit 5. Description of the acronyms used is provided in Appendix E.

The thirty-two action items represent a reduction from fifty-eight action items in the last strategy (SDS II), allowing for more focus; but there was also a broadening of responsibility centres involved in SDS III, from sixteen in the previous strategy (SDS II). This indicates an expansion of the reach of SD as a cross-cutting issue for the department.

Exhibit 5 also offers a sense of how the implementation of the thirty-two action items contributed to the sustainable development issues identified previously by the internal and external issues scans. Bold checkmarks (✔) indicate action items anticipated to have the strongest impact; smaller checkmarks (✓) indicate expected impacts that are of a positive but lesser nature. An (x) indicates that this impact was not originally identified in the SDS III *Strategy 2003-06* document, but was indicated as an impact in subsequent monitoring reports associated with the action item.

Individual responsibility centres were also asked to identify the potential impact of their action items on "economic", "environmental", and "social" concerns. Overall, the average score for these general areas of concern indicate the following focus of the action items:

- 41% on economic concerns
- 34% on environmental concerns
- 25% on social concerns.

These are of course only very general indications of the orientation of the action items towards very broad policy perspectives. Detailed results of individual action items will be examined in subsequent sections of this report.

Exhibit 5: SDS III Anticipated Impacts

IC SDS III Strategic Outcome Area	IC SDS III Action Item	SD Issues that Action Items are Anticipated to Impact *									Classification			Responsibility Centre **
		Sustainability Vision	Marketplace development	Investment in R&D Infrastructure	HR training & development	Communication of SD achievements	Tech. commercialization & adoption	Sustainability production & consumption	Climate change	Results measurement	% Economic	% Environmental	% Social	
Increase commercialization & adoption of eco-efficient tools & technologies Work in partnerships with industry and others to demonstrate the contribution of eco-efficiency to enhancing productivity and environmental performance through capacity building in R&D and skills; promote technology innovation; and apply the tools in the marketplace.														
Capacity building in R&D and skills	1. Canadian Foundation for Innovation (CFI)		✓	**✓**	**✓**	✓	**✓**	✓	**✓**		40	40	20	IPB
	2. Networks of Centres of Excellence (NCE)			**✓**	**✓**		**✓**		✓		40	40	20	IPB
	3. Advancing the Bio-Based Economy	✓	**✓**	✓	x		✓	**✓**	x		40	30	30	LSB, MIB
	4. Promoting Nanotechnology Awareness	✓	**✓**	**✓**			✓				60	20	20	MIB
	5. Human Capital Development	✓			**✓**	**✓**					50	15	35	SPB
Promoting Technology Innovation	6. Technology Partnerships Canada (TPC)		**✓**	**✓**		✓	**✓**	**✓**	**✓**		40	40	20	TPC
	7. Pre-Competitive Applied Research Network (PRECARN)			**✓**		✓	**✓**	x			60	30	10	ICTB
	8. Promoting 25-percent Increase in New Vehicle Fuel Efficiency	x		✓			✓		✓	x	40	60		AAB
	9. Advancing the Hydrogen Economy	**✓**	**✓**	✓			✓	x	✓		25	50	25	AAB, EMB
	10. Promoting Renewable Energy in the Cdn & International Marketplace	**✓**	**✓**	**✓**			**✓**	**✓**	x		50	25	25	EMB
Applying the Tools in the Marketplace	11. Technology Roadmaps (TRM) for Planning CC Technologies	**✓**	✓	✓	x		✓		✓		60	30	10	MIB
	12. Promoting Construction, Architecture, and Engineering Solutions for GHG Emissions Reductions	x	✓	✓			✓		✓		40	40	20	STSIB
	13. Advancing Sustainable Manufacturing Practices	✓	**✓**	x	**✓**	x	x	**✓**	**✓**		40	40	20	MIB
	14. Increasing Environmental Stewardship in SMEs	x	**✓**		✓			**✓**	**✓**		40	40	20	STSIB
	15. Advancing Adoption of Environmental Supply Chain Mngmnt. Tools		✓		x			**✓**	**✓**		50	40	10	STSIB
	16. Promoting Canadian Climate Change Technologies/Services Abroad		**✓**	**✓**	✓		**✓**		**✓**		45	45	10	STSIB

* These are as reported in *Industry Canada: Sustainable Development Strategy 2003-06*.

** Responsibility centre acronyms are defined in Appendix E.

NOTE: Bold checkmarks (**✓**) indicate action items anticipated to have the strongest impact; smaller checkmarks (✓) indicate expected impacts that are of a positive but lesser nature. An (x) indicates that this impact was not originally identified in the SDS III *Strategy* document but was indicated as an impact in subsequent monitoring reports associated with the action item.

Exhibit 5 (continued): SDS III Anticipated Impacts

IC SDS III Strategic Outcome Area	IC SDS III Action Item	SD Issues that Action Items are Anticipated to Impact *									Classification			Responsibility Centre **
		Sustainability Vision	Marketplace development	Investment in R&D Infrastructure	HR training & development	Communication of SD achievements	Tech. commercialization & adoption	Sustainability production & consumption	Climate change	Results measurement	% Economic	% Environmental	% Social	
Increase use by industry, institutions, and communities of corporate responsibility and sustainability practices Work in partnership with industry, other government departments and others to promote corporate responsibility and sustainable development practices in businesses and encourage sustainable development for communities.														
Promoting Corporate Responsibility and Sustainability	17. Advancing Sustainable Development Policy Frameworks	x	✓	x	x	x	✓	x	✓	x	50	30	20	STSIB
	18. Broadening Corporate Social Responsibility Awareness in Canadian Industry	x	✓		✓	x		✓			33	33	33	SPB
	19. Developing Corporate Social Responsibility Tools and Management Capacity	x			✓	x		✓			33	33	33	OCA, SPB
	20. Increasing Quantity, Quality, and Credibility of Corporate Sustainability Reporting		x		✓			✓			33	33	33	SPB
	21. Facilitating Establishment of Electronic Products Recycling Network	✓	✓					✓	x		30	50	20	ICTB
	22. Demonstrating Electronic Stewardship for the Internet				✓						20		80	IHAB
Advancing Local and Global Sustainability	23. Information and Communications Technologies Reuse and Recycling	x	x	✓	x	✓	✓		x		33	33	33	IHAB
	24. Application of Information and Communications Technologies to Improve Underserved Sustainability in Communities	x	✓	✓		✓	✓			x	75	5	20	CRC, IHAB
	25. Promoting the Aboriginal Business Development Programme for Small Businesses			✓		✓	x	x			60	20	20	ABC
	26. Implementing and Expanding the Sustainable Cities Initiative (SCI) to Improve the Sustainability of Cities in Developing Countries	✓		✓		✓	✓		x		40	40	20	STSIB

* These are as reported in *Industry Canada: Sustainable Development Strategy 2003-06*.

** Responsibility centre acronyms are defined in Appendix E.

NOTE: Bold checkmarks (✓) indicate action items anticipated to have the strongest impact; smaller checkmarks (✓) indicate expected impacts that are of a positive but lesser nature. An (x) indicates that this impact was not originally identified in the SDS III *Strategy* document but was indicated as an impact in ongoing monitoring reports associated with the action item.

Exhibit 5 (continued): SDS III Anticipated Impacts

IC SDS III Strategic Outcome Area	IC SDS III Action Item	SD Issues that Action Items are Anticipated to Impact *								Classification			Responsibility Centre **
		Sustainability Vision	Marketplace development	Investment in R&D Infrastructure	HR training & development	Communication of SD achievements	Tech. commercialization & adoption	Sustainability production & consumption	Climate change	Results measurement	% Economic	% Environmental	% Social	
Enhance capacity of Industry Canada's sustainable development management system Enhance the capacity of Industry Canada's management systems by focusing on the planning, performance measurement, and evaluation functions, and improve the integration of sustainable development into decision-making processes.														
Improving Sustainable Development Planning, Performance Measurement, and Evaluation	27. Integrating Sustainable Development into the Department's Strategic Planning and Reporting Frameworks	x			x	✓				✓	33	33	33	SPB
	28. Renewing the Greening Operations Plan					x		x	✓		25	50	25	FSFSB
	29. Updating the Sustainable Development Evaluation Initiatives	x			x	✓				✓	33	33	33	AEB
	30. Improving Sustainable Development Training and Awareness				✓	✓					40	40	20	HRB, SPB
	31. Promoting Sustainable Development Through Senior Management Champions			x	✓	✓					33	33	33	EMB, SPB
	32. Supporting Industry Canada's Sustainable Development Challenge, University of Cycling Initiative				✓	✓		x	✓	x	33	33	33	SPB

* These are as reported in *Industry Canada: Sustainable Development Strategy 2003-06*.

** Responsibility centre acronyms are defined in Appendix E.

NOTE: Bold checkmarks (✓) indicate action items anticipated to have the strongest impact; smaller checkmarks (✓) indicate expected impacts that are of a positive but lesser nature. An (x) indicates that this impact was not originally identified in the SDS III *Strategy* document but was indicated as an impact in ongoing monitoring reports associated with the action item.

IV. Relevance of SDS III

The findings of the evaluation of SDS III on the issue of relevance of the strategy are presented in this chapter of the report. Results regarding the following specific research questions are described:

- Is SDS III consistent with the department's mandate? How do the SDS III action items relate to IC's strategic objectives? (Addressed in Section 4.1.)
- What is the relevance of IC's SDS III to the government-wide sustainable development objectives? (Addressed in Section 4.2.)

4.1 Consistency of SDS III with IC's Mandate

The Department's mandate—Industry Canada's mandate is to help make Canadians more productive and competitive in the knowledge-based economy, thus improving the standard of living and quality of life in Canada. The department's policies, programs and services help grow a dynamic and innovative economy that:

- provides more and better-paying jobs for Canadians;
- supports stronger business growth through continued improvements in productivity and innovation performance;
- gives consumers, businesses and investors confidence that the marketplace is fair, efficient and competitive; and
- integrates the economic, environmental and social interests of Canadians.[8]

Industry Canada works towards achieving these priorities through its intended three strategic outcomes:

- a fair, efficient and competitive marketplace;
- an innovative economy; and
- competitive industry and sustainable communities.

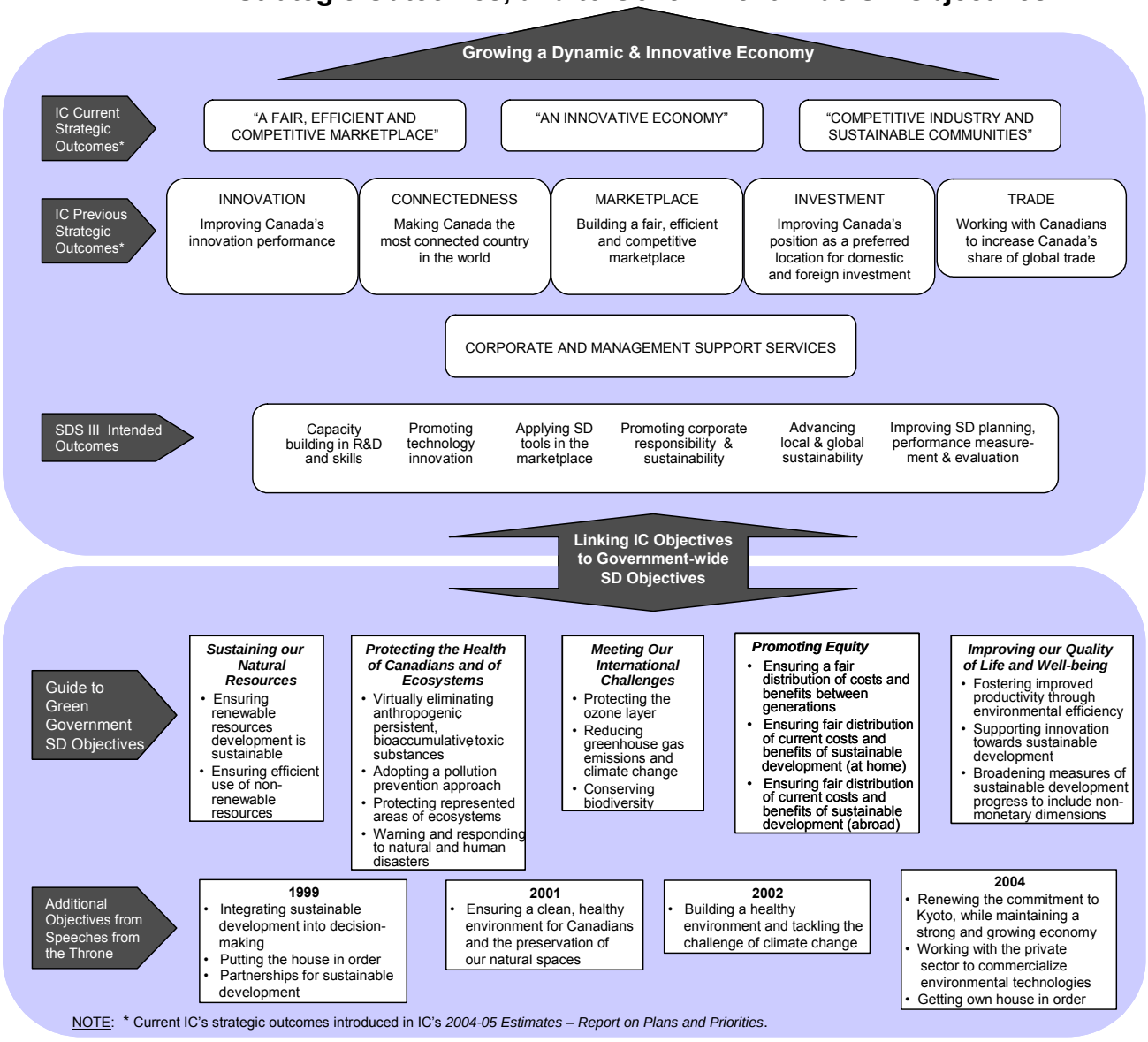
Making the link between SD and the Department's mandate—Taken together, the department's strategic outcomes support growth in employment, income, productivity and sustainable development in Canada. To help deliver on these strategic outcomes, Industry Canada partners with other government departments to offer businesses and consumers a variety of programs and services. These programs and services cut across three dimensions of policy—economic, environmental and social—and involve complex synergies and trade-offs that lead to sustainable development results.

8 2005-2006 Estimates: Report on Plans and Priorities, Industry Canada, page 3.

Exhibit 3 in Chapter 3 depicted logical relationships between the SDS III priorities and the overall vision of the department for SDS III. Exhibit 6, below, provides the context for SDS III that reflects Industry Canada's specific strategic directions as they were presented in the department's strategy, *Making a Difference: Contributing to the Quality of Life of Canadians 2003* (October 2003).

In light of Industry Canada's mandate to promote sustainable development, the department does have the opportunity to highlight the economic benefits of sustainable development by underscoring the links between SD and economic growth. The department, in delivering its SD action items, does make the link between SD and the efficient and environmentally responsible use of economic resources, which also lead to an improved quality of life and wellbeing.

Exhibit 6: Linking Industry Canada's SD Objectives to its Overall Strategic Outcomes, and to Government-wide SD Objectives



NOTE: * Current IC's strategic outcomes introduced in IC's *2004-05 Estimates – Report on Plans and Priorities*.

The department has a number of instruments that it uses to achieve the intended outcomes of its sustainable development strategies. Exhibit 7 lists several of these instruments and highlights how SDS III has utilized them. As Exhibit 7 demonstrates, the department has clearly made good and relevant use of the diverse tools available to it to address the intended outcomes of SDS III.

Exhibit 7: IC Delivery Instruments for Achieving SDS III Results

IC DELIVERY INSTRUMENTS	SDS III INTENDED OUTCOMES					
	Capacity building in R&D and skills	Promoting technology innovation	Applying the tools in the marketplace	Promoting corporate responsibility & sustainability	Advancing local and global sustainability	Improving SD planning, measurement, & evaluation
Activity in international fora		√	√		√	√
Funding support/programs	√	√			√	
Guidelines & application tools			√	√	√	√
MOUs & other agreements			√		√	
Multi-stakeholder committees	√	√	√	√	√	√
Networking activities	√	√		√	√	
Newsletters, brochures & other info-dissemination materials & reports			√	√	√	√
Partnerships/ collaborations	√	√	√	√	√	√
Policy & legislative framework		√		√	√	√
Putting own house in order						√
Research chairs	√	√				
Research studies & reports	√	√	√	√	√	√
Standards & regulations			√	√	√	√
Technology demos & trade show venues		√			√	
Technology roadmaps		√			√	√
Third-party delivery	√	√	√		√	
Training	√			√	√	√
Web sites and databases			√	√	√	√
Workshops/seminars			√	√	√	√
Voluntary mechanisms			√	√	√	

SDS III is diversified across the Department—In past SD initiatives the majority of SD action items made the strongest link with sustainable development through the department's innovation objective. This is certainly also true with SDS III action items. Of the 32 action items associated with SDS III, 21 are directly linked to "innovation". Most IC individuals consulted for this study, however, believe that the department's contribution to SD has become relatively more diversified in scope across the department and across IC's

other strategic objectives, compared to previous SD strategies. (See Exhibit 8, below, for the distribution of SD action items as they relate to each of IC's strategic objectives, across branches within the department.)

In addition, it is generally believed within IC that the department has been successful in integrating sustainable development with its corporate objectives. SD is an integral component of IC's priorities, to reflect its importance as a major cross-cutting policy issue. To deliver on its mandate, the department took the required steps to explicitly link sustainable development with relevant programs and policies. For example, sustainable development is included in the *2005-2006 Estimates—Report on Plans and Priorities*, committing the department to play a strategic enabler role and promoting SD solutions through innovation towards sustainable development, corporate and community sustainability, and sustainable development capacity building within IC.

Relevance of SDS III action items—Exhibit 8 shows the activity structure of SDS III, identifying departmental responsibility centres and the relationship of activities to Industry Canada's general strategic objectives. The activities are also identified in the context of Industry Canada's corporate and management services that support the department's programs and define internal operations.

Overall, SDS III action items are reasonably distributed across the three main objectives of the strategy. There are 16 action items related to the "innovation towards sustainable development" objective; 10 action items related to the "corporate and community sustainability" objective; and 6 action items related to the "sustainable development capacity building within IC" objective.

Based on Exhibit 8, 29 of the 32 SDS III action items are somehow linked to "innovation", 8 are somehow linked to "connectedness", 11 to "marketplace", 9 to "investment", and 9 to "trade". Six of the action items directly relate to the support function of corporate and management services. There are overlaps between many of these links because an action item can potentially relate to more than one corporate theme or strategic outcome. In 2004, responsibility centres were also asked to identify their action items as they link to broader strategic themes: "marketplace", "economic development", and "science, technology and innovation." The results of those linkages are also shown in Exhibit 8.

The previous Exhibit 5 in Chapter III also demonstrated that a great diversity of IC responsibility centres have been involved in SDS III initiatives. This is somewhat in contrast to the previous SDS II, when a relatively significant number of the action items resided within two branches: the Strategic Policy Branch (13 of 52 action items) and Environmental Affairs Branch (16 of 52 action items).[9] There has also been a progression in SDS III towards a greater diversity of SD initiatives within the department across more branches, from sixteen branches in SDS II to 23 branches in SDS III.

[9] As reported in Mid-term Evaluation Study of SDS II, 2000-2003, July 2003.

Exhibit 8: SDS III Activity Structure

IC SDS III Strategic Outcome Area	IC SDS III Action Item	Strategic Objectives* 2003-04					2004-06		
		Innovation	Connectedness	Marketplace	Investment	Trade	Marketplace	Economic Dev.	Science, Tech. & Innovation
Increase commercialization and adoption of eco-efficient tools and technologies Work in partnerships with industry and others to demonstrate the contribution of eco-efficiency to enhancing productivity and environmental performance through capacity building in R&D and skills; promote technology innovation; and apply the tools in the marketplace.									
Capacity building in R&D and skills	1. Canadian Foundation for Innovation (CFI)	✓							✓
	2. Networks of Centres of Excellence (NCE)	✓							✓
	3. Advancing the Bio-Based Economy	✓		✓	✓		✓	✓	✓
	4. Promoting Nanotechnology Awareness	✓		✓		✓	✓	✓	✓
	5. Human Capital Development	✓						✓	
Promoting Technology Innovation	6. Technology Partnerships Canada (TPC)	✓							✓
	7. Pre-Competitive Applied Research Network (PRECARN)	✓	✓						
	8. Promoting 25-percent Increase in New Vehicle Fuel Efficiency	✓			✓	✓			
	9. Advancing the Hydrogen Economy	✓		✓	✓		✓	✓	✓
	10. Promoting Renewable Energy in the Canadian and International Marketplace	✓			✓				
Applying the Tools in the Marketplace	11. Technology Roadmaps (TRM) for Planning Climate Change Technologies	✓	✓	✓	✓	✓	✓	✓	✓
	12. Promoting Construction, Architecture, and Engineering Solutions for GHG Emissions Reductions	✓						✓	✓
	13. Advancing Sustainable Manufacturing Practices	✓						✓	✓
	14. Increasing Environmental Stewardship in Small and Medium Size Enterprises	✓		✓			✓		
	15. Advancing Adoption of Environmental Supply Chain Management Tools	✓						✓	
	16. Promoting Canadian Climate Change Technologies and Services Abroad	✓				✓	✓		

* More recently, these five objectives of the department have been renewed as three strategic outcomes: "a fair, efficient and competitive marketplace"; "an innovative economy"; and "competitive industry and sustainable communities".

** Key for responsibility centre acronyms is provided at the end of Exhibit 11.

Note: Bold checkmarks mean that the activity **mainly** relates to the indicated strategic objective.

Exhibit 8: SDS III Activity Structure (Continued)

IC SDS III Strategic Outcome Area	IC SDS III Action Item	Strategic Objectives* 2003-04					2004-06		
		Innovation	Connectedness	Marketplace	Investment	Trade	Marketplace	Economic Dev.	Science, Tech. & Innovation
Increase use by industry, institutions, and communities of corporate responsibility and sustainability practices Work in partnership with industry, other government departments and others to promote corporate responsibility and sustainable development practices in businesses and encourage sustainable development for communities.									
Promoting Corporate Responsibility and Sustainability	17. Advancing Sustainable Development Policy Frameworks	**✓**		✓					
	18. Broadening Corporate Social Responsibility Awareness in Canadian Industry	**✓**							
	19. Developing Corporate Social Responsibility Tools and Management Capacity	**✓**							
	20. Increasing Quantity, Quality, and Credibility of Corporate Sustainability Reporting	**✓**							
	21. Facilitating Establishment of Electronic Products Recycling Network	✓	**✓**	✓		✓		✓	
	22. Demonstrating Electronic Stewardship for the Internet	✓	**✓**						✓
Advancing Local and Global Sustainability	23. Information and Communications Technologies Reuse and Recycling	✓	**✓**						✓
	24. Application of Information and Communications Technologies to Improve Underserved Sustainability in Communities	✓	**✓**	✓	✓	✓	✓	✓	✓
	25. Promoting the Aboriginal Business Development Programme for Small Businesses	**✓**			✓	✓		✓	
	26. Implementing and Expanding the Sustainable Cities Initiative (SCI) to Improve the Sustainability of Cities in Developing Countries					**✓**		✓	

* More recently, these five objectives of the department have been renewed as three strategic outcomes: "a fair, efficient and competitive marketplace"; "an innovative economy"; and "competitive industry and sustainable communities".

** Key for responsibility centre acronyms is provided at the end of Exhibit 11.

Note: Bold checkmarks mean that the activity **mainly** relates to the indicated strategic objective.

Exhibit 8: SDS III Activity Structure (Continued)

IC SDS III Strategic Outcome Area	IC SDS III Action Item	Strategic Objectives* 2003-04					2004-06			
		Innovation	Connectedness	Marketplace	Investment	Trade	Corp. Manage.	Marketplace	Economic Dev.	Science, Tech. & Innovation
Enhance capacity of Industry Canada's sustainable development management system*** Enhance the capacity of Industry Canada's management systems by focusing on the planning, performance measurement, and evaluation functions, and improve the integration of sustainable development into decision-making processes.										
Improving Sustainable Development Planning, Performance Measurement, and Evaluation	27. Integrating Sustainable Development into the Department's Strategic Planning and Reporting Frameworks	✓	✓	✓			✓	✓	✓	✓
	28. Renewing the Greening Operations Plan						✓			
	29. Updating the Sustainable Development Evaluation Initiatives	✓					✓			✓
	30. Improving Sustainable Development Training and Awareness	✓	✓	✓	✓	✓	✓			
	31. Promoting Sustainable Development Through Senior Management Champions	✓		✓	✓		✓			
	32. Supporting Industry Canada's Sustainable Development Challenge, University of Cycling Initiative						✓			

* More recently, these five objectives of the department have been renewed as three strategic outcomes: "a fair, efficient and competitive marketplace"; "an innovative economy"; and "competitive industry and sustainable communities".

** Key for responsibility centre acronyms is provided at the end of Exhibit 11.

Note: The emphasis in action items 27 to 32 is on achieving Industry Canada's Corporate Management objective for SDS III.

4.2 Relevance of SDS III for the Government's SD Priorities

Government-wide SD priorities—Exhibit 6 in the previous section provided the overall context for the government-wide SD framework as identified in *A Guide to Green Government* and in references to *Speeches from the Throne (1999, 2001, 2002, and 2004)*.

The *Guide to Green Government* objectives are focused on the following goals:

- sustaining our natural resources;
- protecting the health of Canadians and of ecosystems;
- meeting our international challenges;
- promoting equity; and
- improving our quality of life and well-being.

The previous government's *Budget Speech* (February 2005) also emphasized an overall government strategic direction of "moving towards a green economy" and linked the initiatives aimed at a "stronger economy" with developing a "better environment". In so doing, the previous government emphasized the need to continue to address climate change issues and investing in environmental technologies.

Relevance of SDS III to Government priorities—Industry Canada's SDS III initiatives are generally perceived, within the department, to be consistent to the broad federal government directions towards SD, as expressed in the various references indicated above.

Advancing the federal government's sustainable development agenda, however, has been a learning experience throughout SDS I, SDS II, and SDS III. It continues to be a challenge for all departments in the federal government, according to those consulted for this mid-term evaluation. Clearly, the three key objectives of SDS III relate to the overall SD government framework. The progress of IC in achieving these objectives is discussed in subsequent chapters of this report.

However, it is commonly recognized that there has been, and still is, a need for a clearer commitment by the federal government, beyond the positions taken by the Commissioner for Environment and Sustainable Development, to facilitate greater co-ordination and coherence in the federal voice on sustainable development.

SDS III initiatives are well integrated into the departments mandate and are linked to its strategic directions. The initiatives evolved through a process of internal consultation with IC staff and external consultations with stakeholders. An iterative process involving background research and discussions between IC management and staff, other government partners, and stakeholders led to the various targeted action items that make up the work agenda of SDS III. This process is seen by IC staff and management as reasonably rigorous, inclusive of differing points of view about how to tackle SD issues, and consistent with government-wide priorities. It is also seen, by IC staff and management as having been responsive to private sector perspectives, in that an external scan of issues and consultation process formed an integral part of the process of defining the Strategy.

Towards a government-wide statement on SD—The Commissioner of the Environment and Sustainable Development, in her 2002 report to the House of Commons, stated that: "The government has yet to provide a clear picture of what a sustainable Canada would look like 20 years from now."[10] In response, an inter-ministerial working group was convened to address this issue. With the recent change in government, a government-wide position on SD commitments is not yet in hand.

In the absence of a clear government-wide statement on SD, it makes it difficult for departments such as Industry Canada to develop long-term SD goals. Notwithstanding, IC has clearly identified its long-term vision, as well as the expected outcomes from its SD action items – including intended results that relate to past government statements on SD.[11]

Most of the action items are actually short or near-term in nature, with roughly a three-year time span, since the Minister of Industry and the department are required to update the strategy every three years. Yet long-term thinking for future generations of Canadians is the essence of SD. In the next sustainable development strategy (SDS IV), the challenge for Industry Canada will be to select the appropriate instruments that best achieve the intended outcomes of the new strategy, in a suitable timeframe that is consistent to a government-wide schedule for achieving results. This challenge can be mitigated only to the extent that consensus emerges on such a timeframe for results, with an accompanying clarity of vision expressed at a government-wide level.

Relevance of SDS III initiatives—IC's mandate, and its policies and programs, and SD initiatives are mutually reinforcing. IC and sustainable development are compatible, in that the department has an important role in ensuring that the government contributes to balanced decision making among economic, environmental and social dimensions of SD. This point is consistently confirmed or supported by those who were consulted within IC for this mid-term evaluation.

In light of Industry Canada's mandate to promote sustainable development, its economic responsibilities are compatible with the goals of sustainable development. Sustainable development is not just the protection of the environment. It includes the efficient and environmentally responsible use of all of Canada's resources—natural, human and economic. A healthy economy is seen by representatives within IC as one that stimulates job growth and wealth but in a way that ensures a high quality of life and a healthy environment.

Industry Canada's sustainable development initiatives, to continue to be relevant, will need to build on its partnerships and collaborations with external stakeholders and with other federal government departments. Industry Canada's SDS III initiatives involved a variety of partnering and collaborative relationships required for the implementation of its SD action items. Chapter V outlines the extent of partnerships and collaborations that IC successfully developed during SDS III. Continued relevance of the SD initiatives will be contingent on the extent to which initiatives are externally focused, broad-based and involve active projects with the private sector and other federal departments. Developing this relevance

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[10] *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*, Office of the Auditor General, 2002, Section 5.65, page 19.

[11] Table 1 on page 16 of Industry Canada's *Sustainable Development Strategy, 2003-2006*, links the SDS III action items to the intended outcomes.

for SDS IV is to a significant extent based on identifying continuing and new priorities, through a consultation process with these partners and stakeholders.

There are many relevant and continuing opportunities for Industry Canada and other departments to work together and share responsibility for moving the sustainable development agenda forward. Consultations conducted for this current mid-term evaluation study within the department, and with some external stakeholders, highlighted some key potential opportunities to further tie Industry Canada's initiatives to government-wide sustainable development priorities. The following areas were suggested as important, going forward into SDS IV, to guide the development of relevant IC action items for the future:

- Voluntary industry approaches, codes and standards of practice.
- Effectiveness of legislative and policy frameworks.
- Promoting awareness of opportunities and benefits of SD among SMEs and among consumers.
- Opportunities for commercialization of technologies that contribute to sustainable development.
- Alignment of economic policy and quality of life objectives of government.
- Responsible reporting practices and accountability.
- Impacts of fiscal and tax incentives for SD performance.

The findings from the internal and the external issues scans, that parallel this mid-term evaluation, will have to confirm the continuing relevance of the SDS III initiatives, and the relative importance to IC of the suggested areas indicated above.

V. Results of SDS III

The findings of the evaluation of SDS III on the issue of achieving objectives and near-term impacts of the strategy are presented in this chapter of the report. Results regarding the following specific research questions are described:

- To what extent is SDS III achieving its innovation towards sustainable development objective? What results is it achieving in increasing commercialization and adoption of eco-efficient tools and technologies? (Addressed in Section 5.1.)

- To what extent is SDS III achieving its corporate and community sustainability objective? What results is it achieving in increasing the use by industry, institutions and communities of corporate responsibility and sustainability practices? (Addressed in Section 5.2.)

- To what extent is SDS III achieving its IC capacity building objective? What results is it achieving in improving IC's SD management system, including the integration of sustainable development objectives into decision making, and the development and delivery of departmental policies, plans and operations? (Addressed in Section 5.3.)

- Have there been any unintended (positive or negative) impacts from SDS III? (Addressed in Section 5.4.)

The next three sections of this chapter begin by setting out the SD priorities associated with IC's SD objectives. These sections continue by listing relevant results of SD action items in table form. These tables summarize and comment on key activities that the department has undertaken in order to complete each action item. Finally, these sections identify whether or not the action items are on track to meet the targets set out for SDS III.

This chapter is based on information and perceptions gathered from the consultation process with IC staff and managers, and from information found in SDS III progress reports, and other relevant documents in IC's SD files—including management summary reports, action item reports and presentations, and related publications (see references in Appendix A). The analysis is evidence-based and is supported by a due diligence research process covering all the relevant information available to the study team at the time of preparing this evaluation report.

5.1 Achieving Innovation Towards Sustainable Development

In SDS III, Industry Canada set out an innovation and eco-efficiency objective to "increase commercialization and adoption of eco-efficient tools and technologies." It committed to work in partnerships with industry and others to demonstrate the contribution of innovation and eco-efficiency to enhancing productivity and environmental performance through capacity building in R&D and skills; promote technology innovation; and apply the tools in

the marketplace. The department defined the following three priority areas that relate to this objective.

- Capacity building in R&D and skills
- Promoting technology innovation
- Applying the tools in the marketplace

Sixteen action items fall under Industry Canada's *innovation towards sustainable development* objective (see Exhibit 5, Chapter III). Five action items (action items 1 to 5) are related to "capacity building in R&D and skills". Five action items (action items 6 to 10) fall under "promoting technology innovation", while six action items (action items 11 to 16) relate to "applying tools in the marketplace".

Exhibits 9 to 11 in the following pages describe IC's progress in completing the *innovation towards sustainable development* objective action items.

IC has undertaken a broad range of activities in order to complete the innovation towards sustainable development objective. Out of 16 action items, the department is near fulfilling, has fulfilled, or exceeded requirements[12] of 9 items, and is making good progress (at "mid-point") towards completing another 5. Two action items were reported to be at an "early implementation" phase but have nonetheless achieved several laudable results.

The discussion that follows in the next sections expands on the status of each action item and verifies whether or not the department is on track to meet the SD targets it set out in SDS III for innovation towards sustainable development.

Overall, the conclusion is that the department is on track in achieving the targets it set out for SDS III. All action items are expected to be completed or renewed by the end of 2006 (calendar year).

5.1.1 Capacity Building in R&D and Skills

Although Canada ranks first among the G8 nations in progress toward environmental sustainability,[13] Canada still faces considerable challenges in terms of building its knowledge infrastructure and national system of innovation. Canada continues to lag behind other major OECD countries in terms of both public and private investments in knowledge infrastructure, which is a key to improving R&D performance. As such, Industry Canada chose to address this issue as it relates to sustainable development through a number of capacity building initiatives during SDS III. By supporting the development of R&D infrastructure and the improvement of skills in academic institutions and industry, IC has contributed to advancing eco-efficiency as it relates to productivity, sustainable economic growth, and environmental performance.

[12] These action items are reported as being in a "late implementation phase", "completed" or "ongoing", and most or all of their intended activities and deliverables have been accomplished.

[13] Canada's ranking ahead of the G8 nations is based on the *2005 Environmental Sustainability Index* of the World Economic Forum. The ESI benchmarks the ability of nations to protect the environment over the next several decades. It does so by integrating 76 data sets – tracking natural resource endowments, past and present pollution levels, environmental management efforts, and the capacity of a society to improve its environmental performance – into 21 indicators of environmental sustainability.

SDS III capacity building involves supporting the R&D community in building Canada's knowledge and research infrastructure; increasing awareness and promoting the development of Canada's Green Advantage for developing bio-processes and bio-based industrial technologies, products and processes to reduce green-house gas emissions; building research partnerships and eco-industrial clusters within government and industry to commercialize research; and supporting the development of human capital/skills to address skilled worker shortages.

Industry Canada is in a unique position to support SD-related R&D at different points of the innovation continuum, from basic and applied research to technology development, production and marketing. For example, through its programs involving Canadian Foundation for Innovation, the granting councils, and Technology Partnerships Canada, SDS III has contributed significantly to R&D that is relevant to Canada's sustainability agenda.

Notable among IC's SDS III accomplishments towards SD-related capacity building in R&D and skills are the following initiatives:

- The Canadian Foundation for Innovation (CFI) has been highly successful in leveraging matching funds in several capacity-building projects that contribute to SD research and development on SD technologies. Some of these projects have targeted industrial waste, facilities for geomatics and sustainability, and national and regional "knowledge clusters"; and CFI has helped to attract highly qualified researchers, postdoctoral fellows and students in SD-related disciplines.

- IC support to five Networks of Centres of Excellence contributed to development of SD-related technologies/processes in automotive R&D, aquacultures, water quality, sustainable forest management, and impacts of climate change in the North.

- Developing Technology Roadmaps and establishing R&D networks is the tool used by IC to contribute to advancing the bio-based economy. This tool has proved effective in leveraging resources and promoting SD initiatives. The reach of these initiatives for SD-related initiatives was measured by IC, achieving over 2,000 Canadian researchers and private sector stakeholders, and over 50 Canadian companies.

Exhibit 9 provides an assessment of achievements for each of the action items associated with the capacity building and skills development goals of SDS III.

Exhibit 9: SDS III Objective Achievement—Capacity Building in R&D and Skills

Action Items	Achievements	Status/Comments [14]
Priority Area: Capacity building in R&D and skills		
1. Canadian Foundation for Innovation (CFI)	During 2003-05, CFI provided funding for new R&D opportunities, innovation and Canadian research chairs in areas related to science, health and the environment – empowering universities to compete for the best talent. The CFI's mandate is to strengthen the capacity of Canadian universities, colleges, research hospitals, and non-profit research institutions to carry out world-class research and technology development that benefits Canadians. CFI funds up to 40% of a project's infrastructure costs. Since 1997 the CFI has disbursed $3.65 billion and based on the shared formula it uses, it will have leveraged from research institutions and their partners to achieve a combined capital investment of $11 billion by 2010. It is well on track to achieving this objective to position Canada in the global knowledge-based economy. SD benefits of the Fund have included developing and retaining highly skilled research personnel qualified for SD-related research and development, promotion and enabling multi-disciplinary research for SD applications, and enabling and expanding research capabilities through supporting state-of-the-art equipment, buildings, laboratories, and databases required to conduct research. Over $7 million support for research chairs during 2003-05 were disbursed. Notable examples of projects supported by CFI have targeted industrial waste, facilities for geomatics and sustainability, national and regional "knowledge clusters", and CFI attracted highly qualified researchers, postdoctoral fellows and students.	- Ongoing. - R&D funds and support for research chairs ongoing. - Targets on track. - Highly successful in leveraging matching funds.
2. Networks of Centres of Excellence (NCE)	Support to five Networks of Centres of Excellence contributed to development of SD related technologies/processes in automotive R&D, aquaculture, water quality, sustainable forest management, and impacts of climate change in the North. Twelve major SD related technologies/ processes/ accomplishments were realized during the 2003-06 period, focused on water quality, advancing Canadian automotive research, sustainable aquaculture, geomatics, forest ecology, and measuring climate change impacts. NCEs play an important role in mobilizing the best research talent in Canada, engaging partners in the private, public and non-profit sectors in collaborative R&D, with a window on discovery at early-stages of technology development.	- Ongoing. - Government's commitment to existing NCEs, with SD related R&D activities, is long-term. - Projects funded include SD components.
3. Advancing the Bio-Based Economy	Technology Roadmap on bio-based feed stocks, fuels and industrial products was produced and validated. 300 stakeholders engaged in the process. Spin-offs from this process led to new partnerships formed to deliver R&D, conferences and workshops, published papers, and new funding for networks from government and private sources. A Canadian bio-based innovation network (CBIN) was also successfully launched. The reach of the TRM and CBIN was measured by IC, achieving over 2,000 Canadian researchers and private sector stakeholders, and over 50 Canadian companies. Over 32 projects under CBIN were underway in the first year, and 21 in the second year. Developing a Green Chemistry Network is underway but has not yet matured.	- Mid-point. - Developing TRMs and establishing R&D networks is the tool used by IC to contribute to advancing bio-based economy. This tool has proved effective in leveraging resources & promoting SD initiatives.
4. Promoting Nanotechnology Awareness	Promotion of nanotechnology as an SD technology for applications in chemicals, plastics & rubber, primary metals and automotive was achieved through establishing a network of 30 departments, delivering symposia, regional visits to stakeholders, co-sponsorships, conferences and trade-shows, and commissioning consultant studies. Impacts of these activities expected to create linkages between private and public sectors to commercialize research into consumer products and services. Impacts on commercialization of nanotechnology not measured, but too early to assess.	- Mid-point. - Difficult to identify the impacts of this promotional activity as reach was not measured. Maybe much too early to assess impacts.
5. Human Capital Development	Human capital development was supported through granting councils, to achieve increased recruitment and retention of highly qualified personnel relevant for SD in Canada. Granting councils (NSERC, SSHRC) reported record numbers of university enrollment of Canadian and foreign students during 2003-06 and SD relevant doctoral fellowships and scholarships were awarded. In just 2004-05, over $200 million training support to 7,000+ students contributed to improving training and skills, including SD-relevant disciplines. Programs supported included: National Research Network on Human Dimensions of Biosphere, Greenhouse Gas Management, Sustainable Forest Management, and the Automobile of the 21st Century.	- Mid-point. - Reporting on granting council initiatives does not explicitly target SD impacts of funding support.

[14] Status of projects is as indicated in the SDS III progress reports, up to September 2005 – i.e., the latest reports available at the time of preparing this document.

5.1.2 Promoting Technology Innovation

Technological and institutional innovation can drive eco-efficiency and, thus, sustainable development. Research, development, demonstration and diffusion of eco-efficient technologies can enhance productivity and innovation. Promoting innovation is critical to meeting environmental obligations such as the Kyoto Protocol and to enhancing productivity and the environmental health of Canadians. Initiatives to promote technology innovation include state-of-the-art research, development and demonstration of environmental and enabling technologies. On the institutional front, new business-strategy paradigms have become critical for lowering our reliance on materials, energy, labour and waste. These benefits are being achieved through management process change, marketing and communications, stakeholder relations, and corporate transparency and equity.

SDS III activities for promoting technology innovation have involved investing in innovative technologies and applied research leading to intelligent solutions to meet industry needs; promoting fuel efficiency for vehicles; supporting the development and commercialization of hydrogen-based technologies, such as fuel-cell technology for cars; and working in partnership with other federal departments and industry partners to strengthen Canada's position with respect to renewable energies.

Notable among IC's SDS III accomplishments towards SD-related innovative technology promotion are the following initiatives:

- During 2003-05 Technology Partnerships Canada has funded 23 projects with SD-related potential such as: fuel-cell technologies, energy-efficient turbines, recycling of steelmaking dust, more efficient paper making, water filtration, integrated waste hydrogen utilization, and others. TPC is highly successful in leveraging matching funds. TPC SD contributions during 2003-05 amounted to over $320 million, leveraging some additional $784 million from private and other sources.

- Several SD-related projects were also completed with IC's support to Precarn (Pre-Competitive Applied Research Network). Precarn is a national, member-owned industrial consortium supporting the development of intelligent systems technologies. During 2003-05 Precarn funded, coordinated and promoted several collaborative SD-related research projects conducted by industry, university and government researchers. Strong partnerships developed from these projects that have contributed to advancing the commercialization of SD-technologies for marketplace relevance.

- IC has contributed to the development of a Memorandum of Understanding between government and the auto-industry, promoting a 25-percent increase in new vehicle fuel efficiency. This MOU with automotive assemblers was signed in 2005, bringing the auto industry on board. The federal government is now monitoring the MOU to assess its impacts. The auto industry has agreed to offer fuel-saving vehicle technologies to reduce GHG emission reductions by 5.3 megatons annually by 2010.

Exhibit 10 provides an assessment of achievements for each of the action items associated with the SDS III goal for promoting technology innovation.

Exhibit 10: SDS III Objective Achievement—Promoting Technology Innovation

Action Items	Achievements	Status/Comments[15]
Priority Area: Promoting technology innovation		
6. Technology Partnerships Canada (TPC)	Through TPC funding for innovative research leveraged: including projects in fuel cell technologies, energy-efficient turbines, recycling of steelmaking dust, more efficient paper making, water filtration, integrated waste hydrogen utilization, and others. Twenty-three SD-related projects were supported during 2003-05. TPC SD contributions during this time amounted to over $320 million, leveraging some additional $784 million from private and other sources. Impact of TPC on SD funding investments during this period totaled over $1.1 billion. Examples of relevant SD projects supported include fuel cell based building backup power, fuel cell power units for industrial vehicles, biomass powered industrial gas turbines, integrated waste hydrogen utilization.	- Ongoing. - R&D funds for SD-related projects are ongoing. - Targets on track. - TPC is highly successful in leveraging matching funds.
7. Pre-Competitive Applied Research Network (PRECARN)	Intelligent technology development has been funded for traffic system controls, building systems that optimize heating, ventilation and air conditioning, efficient monitoring and inspection of pipelines for maintenance and safety, and environmental chemical monitoring. Several SD project initiatives were completed during 2003-05, including a prototype for an HVAC system that decreases natural gas and electrical systems consumption through more efficient technology, resulting in CO2 reductions; an intelligent system for pipeline reliability to prevent failures and oil/gas spills; and the plans for developing a water-gas containment detector to be commercialized.	- Late implementation. - Projects are on track. - Strong partnerships developed, involving private sector, academia, and several government departments and agencies.
8. Promoting 25-percent Increase in New Vehicle Fuel Efficiency	In 2005 an MOU with automotive assemblers was achieved, to reduce GHG emissions. Report on economic instruments for fuel efficiency was disseminated. Monitoring of the MOU by government is ongoing, to assess its impacts. IC assesses that auto companies have understood their capabilities and technology capacity to achieve 25% target reduction fuel efficiency. Feebates averted and auto industry has agreed to offer fuel-saving vehicle technologies to reduce GHG emission reductions by 5.3 megatons annually by 2010.	- Completed. - MOU signed. - Auto industry on board. - Government continuing to monitor progress on GHG emission reductions.
9. Advancing the Hydrogen Economy	Hydrogen economy roadmap report produced in collaboration with industry and academia. Several companies applied for TPC assisted R&D in hydrogen economy projects. Companies such as Ford and GM are participating in fuel cell research. Several initiatives under this action item are helping to advance Canada towards commercialization of hydrogen fuel cell applications (e.g., buses, hybrid vehicles). A report on industry supply chain including identification of suppliers, raw material to end user schematic, and a national map of materials flow, was implemented to increase awareness of potential hydrogen and fuel cell technology commercialization. In 2005 SDTC announced $2 million in funding for two hydrogen projects; and TPC announced $18.5 million in funding for a project to develop fuel cell power units in industrial lift trucks. Other hydrogen-related projects are being assessed with the participation of IC.	- Early implementation. - IC's assessment is that this initiative is moving ahead gradually in the right direction. - Advancing slowly but surely towards commercialization of hydrogen economy. - IC participating in multi-agency partnerships and working groups.
10. Promoting Renewable Energy (RE) in the Canadian and International Marketplace	Enhancement of wind-energy technology achieved through training and publication/dissemination of metrics reports and findings of trials and case studies, and establishing renewable energy coalitions among stakeholders. National and international networking events among investors and practitioners, and opportunities brochure completed/disseminated. A study on supply chain manufacturing capabilities for Canada's wind industry with stakeholders was completed, and an investment opportunities communiqué was disseminated. IC has contributed to the planning phases to establish a national wind energy strategy. Report on human resources needs assessment and training gap for RE completed, and a planning report was issued and is being used for capacity building in RE. In 2005, an industrial metrics baseline survey to assess revenue streams, ownership, and current employment in the wind energy industry was initiated, and a report on survey results was completed. Survey intended to be annual; comparisons to baseline results pending completion of 2006 survey.	- Mid-point. - Projects require ongoing collaborations with partners. - Wind energy promotional initiatives of IC are on track, at national and international levels. - Results of promotional activities not measured.

[15] Status of projects is as indicated in the SDS III progress reports, up to September 2005 – i.e., the latest reports available at the time of preparing this document.

5.1.3 Applying the Tools in the Marketplace

Industry Canada's efforts in this area involve empowering business and consumers with the knowledge required to make eco-efficiency a part of daily life and common business practice. The modernization of business management approaches, including voluntary participation in SD-related initiatives, are important because they encourage companies to go beyond compliance with the law, and they provide opportunities to find new and better ways of doing business in a profitable and sustainable manner.

Applying the tools in the marketplace involves actively encouraging the transfer, adoption and implementation of eco-efficient production tools, practices, processes and technologies at the firm level in order to achieve measurable improvements in productivity and environmental performance.

SDS III has seen a steady participation by stakeholders in development of SD tools in collaboration with Industry Canada and government departments and agencies. SDS III has involved developing and applying roadmaps for forecasting future market and industry needs, and planning best approaches for marketing and commercialization of climate change technologies; promoting innovative technologies for construction and engineering solutions to achieve greenhouse gas emissions reductions; building awareness and promoting innovative sustainable manufacturing practices; supporting the adoption of environmental stewardship approaches and management tools for small businesses; and promoting Canadian climate change technologies and services at home and abroad.

Notable among IC's SDS III accomplishments towards applying SD tools in the marketplace are the following initiatives:

- IC has acted as a catalyst for the development of several SD-related Technology Roadmaps during 2003-05: for clean coal, biopharmaceuticals, CO2 capture and geological storage, and aerospace competitive intelligence. Industry has responded to these initiatives, driving the development of the roadmaps and collaborating on several pertinent projects.

- During 2003-05 IC has sponsored and/or participated in international workshops and trade missions to promote Canadian climate change technologies and services, which have contributed to increasing opportunities for Canadian companies to meet foreign buyers and governments interested in their technologies and climate change projects. This included outreach initiatives involving China, India, Mexico and Europe, and involved hundreds of Canadian companies indicating increased foreign commercial opportunities.

Exhibit 11 provides an assessment of achievements for each of the action items associated with the SDS III goal for applying SD tools in the marketplace.

Exhibit 11: SDS III Objective Achievement—Applying the Tools in the Marketplace

Action Items	Achievements	Status/Comments[16]
Priority Area: Applying the tools in the marketplace		
11. Technology Roadmaps (TRM) for Planning Climate Change Technologies	Roadmaps for clean coal, biopharmaceuticals, CO2 capture and geological storage, and aerospace competitive intelligence were developed. A wide array of partnerships was involved in developing these roadmaps. Some of these roadmaps were produced on CD and distributed to interested parties, e.g., bio-fuels from biomass roadmap and clean coal roadmap were extensively distributed to stakeholders on CD. Industry stakeholders have been very keen on outcomes of these roadmaps, with very positive feedback on their impact in proliferating knowledge and in identifying and stimulating several collaborative project opportunities. For example, six collaborative projects were identified associated with the Aerospace Competitive Intelligence roadmap.	- Late implementation. - IC has acted as a catalyst for the development of TRMs, with positive impacts. - Industry has responded, driving the development of several TRMs pertinent for SD-related collaborative project opportunities.
12. Promoting Construction, Architecture, and Engineering Solutions for GHG Emissions Reductions	Awareness seminars and policy advocacy completed for green building design and construction. A business case for green buildings has been prepared for IC, and a green building component of the CES company directory led to 913 companies being registered in this component, involving Industry Canada's Strategis database. Symposia and workshops have helped to disseminate the benefits of green building design and construction. The impacts are assessed to be relevant to the reduction of GHG emissions in buildings, as more and more construction companies enroll and utilize green technologies and products. Developing a website for green buildings has contributed to showcasing Canadian green building services, technologies and products to local and international audiences.	- Mid-point. - Several promotional activities have been successfully completed, but the intention of promoting a TRM for Intelligent Buildings Technologies is put on hold due to staff turnover.
13. Advancing Sustainable Manufacturing Practices	A sustainable manufacturing database was built featuring materials, manufacturing processes and lean manufacturing best practices; and a series of workshops and business cases to better educate the manufacturing sector on lean manufacturing were produced. Seventy lean manufacturing success stories and best practices have been published on the Strategis website. Ongoing activities include building a Canadian network of academic and business experts to help plan and develop a strategic framework for sustainable manufacturing.	- Early implementation. - Limited resources available have slowed this project due to complexity of gathering necessary business intelligence.
14. Increasing Environmental Stewardship in Small and Medium Size Enterprises	Good environmental practices promoted among SMEs through workshops, conferences, publication of studies, development of public and private sector databases on programs supporting environmental sustainability. Interdepartmental group established to review and evaluate approaches targeting SMEs. Study completed on barriers to SMEs for adopting environmental management systems. A report on environmental supply chain management and linkages with SMEs was completed and disseminated. A report on SME uptake of management systems standards completed. Available online tools have been provided to help companies improve their environmental performance.	- Completed. - Impacts of SDS III activities (e.g., number of SMEs adopting EMS and environmental stewardship) not measured.
15. Advancing Adoption of Environmental Supply Chain Management Tools	At least three workshops with academia and private sector were organized to advance knowledge and awareness of environmental supply chain management practices, used as a means to heighten awareness of climate change implications and to encourage GHG emission-reduction activities. At least twenty-four SMEs have been reached through these workshops, and nine are actively involved in a project to understand the SME perspective and their footprint on GHG emissions. A supply chain management tools website developed for this action item has achieved 4,221 hits by September 2005.	- Late implementation. - Reporting on this action item and results are ambiguous.
16. Promoting Canadian Climate Change Technologies and Services Abroad	International workshops and trade missions to promote Canadian Climate Change technologies and services have contributed to increasing opportunities for Canadian companies to meet foreign buyers and governments interested in their technologies and climate change projects. Outreach includes hundreds of companies. For example, the Trade Team Canada Environment Mission to China in 2004 drew the interest of 14 Canadian companies; 12 media and networking events; 3 site visits; 7 seminars and workshops; 1 trade show. Similar numbers achieved on trade missions to India; and on incoming missions from Mexico, Europe, India and China.	- Completed. - Activity targets achieved. - Number of opportunities resulting, for Canadian climate change technology firms, not tracked.

[16] Status of projects is as indicated in the SDS III progress reports, up to September 2005 – i.e., the latest reports available at the time of preparing this document.

5.2 Achieving Corporate and Community Sustainability

In SDS III, Industry Canada set out a corporate and community sustainability objective to "increase use by industry, institutions, and communities of corporate responsibility and sustainable practices." It committed to work in partnership with industry, other government departments and others to promote corporate responsibility and sustainable development practices in businesses and encourage sustainable development for communities. The department defined the following two priority areas that relate to this objective.

- Promoting corporate responsibility and sustainability.
- Advancing local and global sustainability.

Ten action items fall under Industry Canada's corporate and community sustainability objective (see Exhibit 5, Chapter III). Six action items (action items 17 to 22) are related to "promoting corporate responsibility and sustainability". Four action items (action items 23 to 26) fall under "advancing local and global sustainability".

Exhibits 12 and 13 describe Industry Canada's progress in completing the corporate and community sustainability action items. The department has undertaken a broad range of activities in order to complete the corporate and community sustainability objective. Out of 10 action items, the department is near fulfilling, has fulfilled, or exceeded requirements[17] connected to 7 items, and is making good progress (at "mid-point") towards completing another 2. One action item is reported to be in an "early implementation" phase (although several results associated with this action item have already been achieved) and could be rolled into SDS IV.

The discussion that follows expands on the status of the action items and verifies whether or not the department is on track to meet the SD objectives it set out in SDS III.

5.2.1 Promoting Corporate Responsibility and Sustainability

Canadian business are being challenged to improve their corporate performance not only in the areas of environmental protection and economics but also on such social-oriented fronts as community development, human resource management practices, human rights and international development, corporate governance, health and safety, and consumer protection. In terms of sustainable development, this translates to evolving their capacity for self-assessment and voluntarily contributing to sustainability by being responsible "corporate citizens" with respect to the environment and commitment to sustainable economic growth.

SDS III contributed to advancing corporate performance in this area by undertaking a number of initiatives for: developing innovative SD policy frameworks for the federal government and private sector to include effective corporate sustainability perspectives; broadening CSR awareness within industry; developing CSR tools and management

[17] These action items are reported as being in a "late implementation phase", "completed" or "ongoing", and most or all of their intended activities and deliverables have been accomplished.

capacity; improving sustainability reporting by Canadian industry; facilitating the establishment of electronic recycling programs in Canada; and demonstrating electronic stewardship for the Internet.

Notable among IC's SDS III accomplishments contributing to advancing corporate responsibility and sustainability are the following initiatives:

- IC is providing positive collaborative expertise, working with other government departments to develop policy frameworks across a number of SD-related issues, including changing the regulatory regime to ensure SD and industrial competitiveness and growth are considered, contributing to energy demand-side management savings, and participating in a number of inter-departmental climate change and funding initiatives.

- It is reasonable to say that increased awareness of industrial sustainability was achieved among Canadian public, industry and government officials as a consequence of IC's activities to broaden Corporate Social Responsibility (CSR).

- IC is active in several CSR initiatives, developing and making available tools for self-assessment of CSR capacity, diagnosing CSR challenges, determining best practices, and prescribing solutions. IC is also active in developing CSR guidance standards and management systems.

- According to expert feedback from within the department, the quantity and quality of CSR reporting is said to have increased as a result of IC's role in improving this accountability requirement. The credibility of corporate sustainability reporting has increased.

- IC officials have been very active in establishing and contributing to inter-governmental and stakeholder electronic recycling networks that are now contributing to establishing standards and provincial regulations for e-waste recycling.

Exhibit 12 provides an assessment of achievements for each of the action items associated with the SDS III goal for promoting corporate responsibility and sustainability.

Exhibit 12: SDS III Objective Achievement—Promoting Corporate Responsibility and Sustainability

Action Items	Achievements	Status/Comments[18]
Priority Area: Promoting corporate responsibility and sustainability		
17. Advancing Sustainable Development Policy Frameworks	This action item is intended to contribute to policy development for sustainable development. IC is working with EC and other government departments to influence the changing regulatory regime to ensure that SD and industrial competitiveness and growth are considered. During 2003-05 IC officers were active on 19 different policy framework initiatives (e.g., developing a framework for petroleum refinery emission reductions, interdepartmental research to prepare Canadian Emission Outlook 2020, design of an offset trading system for GHG, Parliamentary review of Canadian Environmental Protection Act, and participation in various climate change reviews & funding initiatives). IC also provides funding support for policy framework and other consumer research under the Office of Consumer Affairs Contributions Program for non-profit consumer and voluntary organizations. During 2003-05, SD-related issues have been addressed in these projects, such as consideration of attribution alternatives for energy demand-side management (DSM) savings, and public interest advocacy (where should the Green choice be made?), as well as how to helping low income consumers in the energy market.	- Ongoing - IC is providing positive collaborative expertise. - Although SD is a priority under the OCA contributions program, the number and nature of projects, consumer organizations, and contributions vary annually based on submissions.
18. Broadening Corporate Social Responsibility Awareness in Canadian Industry	Corporate Social Responsibility was promoted through conferences, workshops and seminars, and by expanding the department's CSR website. Case studies and CSR reports were supported and published/disseminated in Canada and abroad. IC sponsored the Conference Board of Canada's well-attended conference on CSR in Toronto; the Corporate Knights' conference "Defining the Corporate Citizen" in Toronto; and Globe 2004 in Vancouver. IC disseminated and posted a number of CSR reports (e.g., "CSR Lessons Learned") on its CSR website. IC also participated in the Americana 2005 Conference in Montreal, focused on spreading and sharing of techniques, knowledge, solutions and technologies allowing pollution mitigation or elimination, and included sessions of a commercial nature on environmental industry business opportunities abroad.	- Late implementation. - It is reasonable to say that increased awareness of industrial sustainability was achieved among Canadian public, industry and government as a result of this action item.
19. Developing Corporate Social Responsibility Tools and Management Capacity	A CSR assessment tool for Canadian businesses was developed. The tool enhances the capacity of firms to conduct self-assessments of their CSR practices, and improves their ability for diagnosing CSR challenges and prescribing CSR solutions. The tool is available on the IC and the Conference Board websites, and on CD-Rom, for firms and stakeholders. IC also participated in a new ISO Advisory Group on CSR to develop an ISO Social Responsibility Standard. The OCA of IC is also contributing to developing a guide on CSR management for Canadian businesses. In addition, a study has been commissioned to explore opportunities and challenges to improve alignment and integration of select international sustainability initiatives in the realm of voluntary standards, as well as to contribute to the development of ISO 26000 Social Responsibility Guidance Standard, due to be published 2008.	- Late implementation. - Various related initiatives in this action item are on track.
20. Increasing Quantity, Quality, and Credibility of Corporate Sustainability Reporting	CSR quantity and quality of reporting successfully increased by developing and improving the *Sustainability Reporting Toolkit* through a series of engagements with Canadian companies. A workshop with 100 participants helped to proliferate knowledge of CSR among existing and potential practitioners; CSR best practices were documented; and a study to examine obstacles and challenges to SMEs on uptake of sustainability standards was prepared to improve knowledge of these obstacles and to help SMEs overcome the challenges for using sustainability standards on management systems and reporting systems.	- Mid-point - Quality and quantity of CSR reporting is said to have increased.
21. Facilitating Establishment of Electronic Products Recycling Network	Electronic product recycling advanced in Canada through working with provinces to establish provincial regulations (e.g., Alberta and Ontario). Alberta recycled 1500 tons of e-waste in 2005. A national steering committee consisting of federal, provincial and municipal stakeholders established to support electronic product recycling; and 15 industrial representatives combined to contribute to implementing roadmap developed by Electronic Product Stewardship (EPS) Canada. IC also supported a number of important research studies to address electronic product recycling issues, such as a study to examine the economic feasibility of a Canadian recycling industry, and a study to conduct a risk assessment of potential hazards associated with e-waste processing.	- Late implementation. - Electronic recycling network is contributing to establishing standards and provincial regulations for e-waste recycling.
22. Demonstrating Electronic Stewardship for the Internet	In SDS III, for the reporting period from 2003 to 2005, IC fostered stewardship for the Internet through support and promotion of safe, wise and responsible Internet use. IC has done this through its partnerships and contribution agreements with the Media Awareness Network's Young Canadians in a Wired World program, which focuses on gaining an understanding of the range of perceptions and attitudes towards children's use of new media and on-line activities. IC also continues to support the Cybertip.ca program which is Canada's National Tipline for reporting the online sexual exploitation of children. During 2003 to 2005, IC supported the development of relevant websites and contracted research studies to address stewardship for the Internet.	- Mid-point - The links of this action item to IC's SDS III agenda is rather ambiguous.

[18] Status of projects is as indicated in the SDS III progress reports, up to September 2005 – i.e., the latest reports available at the time of preparing this document.

5.2.2 Advancing Local and Global Sustainability

Connectedness of Canadians living in rural and urban regions across the country has been one of Industry Canada's key objectives over the past decade or so. The department has a number of ongoing initiatives that promote various dimensions of sustainable development by providing access to the Internet for all Canadians; providing equal access to disadvantaged areas; improving the IT-literacy skills and knowledge of young Canadians in their communities; and promoting economic development in rural and remote communities.

In the context of the challenges associated with connecting all Canadians, it is important to also advance sustainable development at both the local and global levels. Progress on this front can be promoted through innovative practices and measures by industry institutions and communities. IC contributed to advancing local and global sustainability through SDS III by facilitating the reuse of surplus computers and other information technology products for use in schools; continuing to address the broadband connectivity needs of unserved Canadian communities; and supporting Aboriginal business to adopt innovative and sustainable practices.

In terms of international efforts, Canada is active in promoting the sustainability of the developing world by encouraging Canadian industry to develop more innovative technologies and services to address the most significant sustainable development challenges abroad. It is important that Canada works to bridge the gap between the needs of developing countries and Canadian industry, as the private sector can play a critical role in reducing poverty, enhancing quality of life and promoting the principles of good governance. In support of these goals, SDS III contributed through the Sustainable Cities Initiative program, by contributing to the improvement of and sustainability of a number of cities in developing countries.

Notable among IC's SDS III accomplishments towards advancing local and global sustainability are the following initiatives:

- The Computers for Schools program, a highly successful voluntary program, addressing a serious industry gap, has gained considerable momentum over the past decade. Over 1.3 million computers have been managed for re-use or recycling; and tens of thousands of other peripheral equipment. This equates to the diversion of an estimated 60,000 tons of material from Canadian landfill sites.

- The Sustainable Cities Initiative successfully evolved from a pilot project to a $15 million program covering 16 cities, 7 of which came on board during SDS III (from 2003 to the present). It is estimated that in excess of 1,500 individuals and 850 organizations (stakeholders and partners) are actively working in 16 cities in 14 countries as a result of SCI. Key informants report several successes in achieving Canadian stakeholder participation in SCI projects.

Exhibit 13 provides an assessment of achievements for each of the action items associated with the SDS III goal for advancing local and global sustainability.

Exhibit 13: SDS III Objective Achievement— Advancing Local and Global Sustainability

Action Items	Achievements	Status/Comments[19]
Priority Area: Advancing local and global sustainability		
23. Information and Communications Technologies Reuse and Recycling	The Computers for Schools (CFS) program has been very successful in refurbishing computers for re-use and recycling disposal. Over 1.3 million computers have been managed for re-use or recycling; and tens of thousands of other peripheral equipment. This equates to the diversion of an estimated 60,000 tons of material from Canadian landfill sites. Other positive impact of this program includes placing the refurbished computers in schools, libraries and non-profit learning organizations. CFS is also working with provincial governments as they develop their "extended producer responsibility" legislation, for life-cycle responsibilities and considerations in the manufacture of electronic equipment. CFS continues to support and provide a working model for re-use and in sharing its practical experience with the IT industry, as they move forward on IT waste "take-back" plans.	- Ongoing. - The CFS has been a highly successful voluntary program, addressing a serious industry gap, gaining considerable momentum over the past decade.
24. Application of Information and Communications Technologies to Improve Underserved Sustainability in Communities	Support for advancing local and global sustainability was provided by IC through IHAB's and CRC's activities towards deployment of broadband to underserved communities – prioritized First Nations, northern, rural and remote communities. The target is to reach as many communities as possible within current budget levels and opportunities. Nine projects have been completed involving 111 communities – including communities in Nunavut, Iles-de-la-Madeleine, rural New Brunswick, Newfoundland and Labrador. Program is under-funded, particularly for reaching the most remote regions, that need the BB service the most.	- Early implementation. - Information on take-up and use of broadband not yet available.
25. Promoting the Aboriginal Business Development Programme for Small Businesses	IC, through Aboriginal Business Canada (ABC), has promoted SD practices through advice, information, training, and funding for Aboriginal entrepreneurs and firms. Canadian Environmental Assessment Act (CEAA) requirements and practices are supported and encouraged by ABC. ABC officers are able to provide advice on SD issues contributing to the continued viability of Aboriginal business. Twenty ABC case development officers were trained on CEAA regulations.	- Ongoing - ABC contributes to SD through improving its environmental assessment training.
26. Implementing and Expanding the Sustainable Cities Initiative (SCI) to Improve the Sustainability of Cities in Developing Countries	Sustainable Cities Initiatives program has successfully brought sixteen cities into the SCI program partnership since its inception. City teams for all sixteen SCI partner cities were formed. SDS III added six new cities as part of this total during 2003-2005. Benefits of sustainable cities designation lead to technical missions, roadmaps, workshops, training, global awareness of Canadian expertise in sustainable technologies and practices, business opportunities, and partnerships across borders towards achieving the SCI objectives. SCI has already achieved its objectives as outlined in the SDS III action item. Three cities have graduated from the program successfully, and program support is continuing to the thirteen remaining cities. In excess of 1,500 individuals and 850 organizations (stakeholders and partners) are actively working in 16 cities in 14 countries as a result of SCI. Numerous related SD projects are in various stages of completion (pre-feasibility, project definition, identification of funding, full-scale implementation, etc.). These projects include SD risk management, local economic development, energy management and efficiency, alternative energy sources, GIS, waste management, IT, transportation, wind energy, water infrastructure, tire pyrolysis, governance, land use planning, EMS, etc.)	- Late implementation. - No new cities are contemplated, but previous government announced commitment of $15 million to continue funding for a further five years (in the 2006-07 budget). - Key informants report success in achieving Canadian stakeholder participation in SCI.

[19] Status of projects is as indicated in the SDS III progress reports, up to September 2005 – i.e., the latest reports available at the time of preparing this document.

5.3 Achieving IC's Capacity Building Objective

In SDS III, Industry Canada set out a departmental capacity building objective to "enhance capacity of IC's sustainable development management system." The department committed to enhance the capacity of its management systems by focusing on the planning, performance measurement, and evaluation functions, and improving the integration of sustainable development into decision-making processes. IC defined the following priority area that relates to capacity building objective:

- Improving SD planning, performance measurement, and evaluation.

Six action items fall under Industry Canada's capacity building objective. All these action items contribute to the intended outcome of improving sustainable development planning, performance measurement, and evaluation.

Exhibit 14 describes IC's progress in completing the department's *capacity building* action items. The department is near fulfilling, has fulfilled, or exceeded requirements[20] associated with all 6 action items.

The discussion that follows expands on the status of these action items and verifies whether or not the department is on track to meet the SD goals it set out in SDS III related to this IC's capacity building objective.

5.3.1 Improving SD Planning, Performance Measurement and Evaluation

Industry Canada's sustainable development management framework for planning, performance management, reporting and evaluation has become well established within departmental processes and systems. During SDS III the department continued to improve on its efforts to integrate SD into the planning process through a range of strategic management initiatives.

IC improved its internal capacity by integrating SD into its management systems. SD is now fully integrated into the departmental strategic planning and reporting framework. IC action items for capacity building include: renewing the Greening Operations Plan of the department; updating SD evaluation initiatives; improving SD training and awareness; promoting SD through senior management champions; and supporting SD through challenging IC personnel to participate in SD-related events and information sessions.

Notable among IC's SDS III accomplishments towards improving sustainable development planning, performance measurement, and evaluation within the department are the following:

- Progress towards integrating SD into the department's strategic planning and reporting frameworks has been substantial. SD plans and reports have been fully integrated into the latest rounds of RPP and DPR reports and processes.

[20] These action items are reported as being in a "late implementation phase", "completed" or "ongoing", and most or all of their intended activities and deliverables have been accomplished.

- Employee feedback and participation in greening operations is very positive, and supportive of the initiatives. Several initiatives during 2003-05 were launched, with a good level of participation.

- SDS evaluation initiatives are all on track, meeting the requirements of accountability and contribution to planning and management of the department's SD strategies. SD considerations are included in RMAFs and SDS III RMAF is completed.

- IC staff and management appear to be well-briefed on SD issues, the role of Industry Canada in contributing to the federal SD agenda, and the department's responsibilities towards its stakeholders and Canada's international obligations.

- The presence and participation of SD champions within the department has provided a high profile for SD within the context of IC's mandate and related activities. Four ADM champions were appointed for outreach to industry, greening operations, and SDS implementation and monitoring.

- IC's SD web site continues to be robust and contributes to dissemination of relevant information within and outside the department.

- Several training and awareness initiatives on SD have been delivered to IC staff, in well-attended sessions.

Exhibit 14 provides an assessment of achievements for each of the action items associated with the SDS III goal for improving sustainable development planning, performance measurement, and evaluation.

Exhibit 14: SDS III Objective Achievement—Improving SD Planning, Performance Measurement and Evaluation

Action Items	Achievements	Status/Comments[21]
Priority Area: Improving sustainable development planning, performance measurement, and evaluation		
27. Integrating Sustainable Development into the Department's Strategic Planning and Reporting Frameworks	Sustainable development plans and reports have been fully and successfully integrated into RPP and DPR planning processes. SD plans and reports have been integrated into 2005-06 RPP, and DPR period ending March 31, 2005. A new template to consolidate high level indicators is in development. Reporting on SD initiatives have been simplified and streamlined, with responsibility centres suggesting that positive change to the action item reporting process has been achieved. Some action item reports, however, still appear fragmented, and cumulative results for the six SDS III strategic outcomes are still difficult to "roll-up". On the other hand, IC sectors demonstrate a high level of understanding of SD issues and provide unprompted instances of SD language being brought forward for inclusion into corporate planning documents.	- Late implementation. - Progress on this action item has been substantial. - Challenge raised by TBS dropping their requirement to include SD planning into the DPR, making it optional.
28. Renewing the Greening Operations Plan	Greening Operations within IC included the following activities: Environment Management System business plan updated; several awareness and promotion campaigns launched (e.g., Environment Week, EnviroNotes, web-based discussion groups, Green Teams, regional outreach, cycling safety seminars, E-week, reducing GHG at home, Eco-Pass for NCR region). In addition, initiatives for recycling waste materials, and computers and peripheral, were undertaken, resulting in reductions of solid-waste going to landfills. A 3Rs program is ongoing as part of the greening operations plan. The EnviroNotes initiative provides a positive vehicle for awareness and information dissemination, e.g., for tips for home energy efficiency, and for green practices within the office. Employee feedback is very positive.	- Ongoing. - Employee feedback and participation in greening operations is very positive, and supportive of the initiatives. - Lack of resources and conflicting priorities could jeopardize results achieved.
29. Updating the Sustainable Development Evaluation Initiatives	Evaluation initiatives: A Results-based Management & Accountability Framework for the SDS initiatives has been completed. This prepares the way for a Summative Evaluation during 2006-07. A mid-term evaluation of SDS III and an update on SDS II is underway; and an IC internal issues scans is also underway to feed into the planning process for SDS IV, due for submission to Parliament by end of 2006.	- Completed and ongoing. - SDS evaluation initiatives are on target.
30. Improving Sustainable Development Training and Awareness	Training and awareness: 3 internal SD training courses were organized by SPB and HRB drawing over 50 individual department participants combined, focusing on the implementation of SD in industry. Two additional SD courses are planned for 2006. Awareness and knowledge of SD accomplished within IC through SD web site enhancements and through internal presentations by IC staff and by external experts, and through publications and promotional materials. More than 50 separate communication SD information pieces were distributed within IC by the responsibility centre. Presentations by Stratos and NRC on sustainable development reporting and performance measurement drew over 35 participants combined. Participants in Environment Week benefited from 12 presentations from IC internal experts. A department-wide meeting is planned to discuss options for SDS IV.	- Late implementation. - These initiatives are on target – targets are being met. - IC staff and management appear to be well-briefed and informed.
31. Promoting Sustainable Development Through Senior Management Champions	Four ADMs were engaged as SD Champions within IC (Senior ADM, Policy Sector; ADM Industry Sector with ADM SITT; and ADM, Comptrollership and Administration). Champions motivated departmental SD initiatives through hosting seminars and lectures; contracting out SD studies; facilitating dialogue with industry stakeholders; supporting greening operations initiatives; ensuring systematic monitoring and reporting on SD projects of the department. Outreach activities of the Champions demonstrated their presence and support to SD on various events and opportunities such as: workshops related to bio-based economy and eco-industrial clustering; speeches delivered by experts and notables; displays of SD materials made available to IC employees and the public; participation as moderators for sessions and keynote speeches involving senior industry officials; participation in high profile conferences (e.g., Wind Conference); support to SD promotional activities within the department; and full support and participation in monitoring and reporting on implementation of SDS III, including DM engagement in the process.	- Late implementation. - Presence and participation of Champions has provided a high profile for SD within the department.
32. Supporting Industry Canada's Sustainable Development Challenge, University of Cycling Initiative	Cycling challenge: A Can-Bike course was delivered, on cycling safety training, and participants in IC's commuter cycling initiative were officially recognized by Environment Canada's One-Tonne Challenge program for taking action to reduce greenhouse gas emissions that contribute to climate change. Benefits for participants include reduced stress levels, quality of life, BMI, weight loss, and general fitness of IC staff. Pre and post fitness assessments of individual participants in the program were completed. It is reasonable to assume that the participants benefited from the challenge, and that lingering impacts from changes in lifestyle habits would have led to ongoing positive results. Average cost savings to car commuters participating in the initiative was $258.41, for bus commuters $94.50.	- Completed. - Course not offered in second semester of 2005, due to staff shortages.

[21] Status of projects is as indicated in the SDS III progress reports, up to September 2005 – i.e., the latest reports available at the time of preparing this document.

5.4 Unintended Impacts

The preceding sections of this chapter presented the available evidence on the results achieved by SDS III regarding *intended* impacts. On the other hand, some of the persons interviewed for this study suggested that there is at least one potentially *negative unintended* impact that should seriously be considered, particularly in planning the next SDS IV agenda.

It was suggested that the departmental emphasis in supporting supply-side management of sustainable development, could potentially lower the focus and interest in addressing demand-side management (DSM) savings. DSM has increasingly become a focus of interest for stakeholders in the energy industry, and among consumer households, particularly, for example, in light of recent blackouts across North America and the rising price of oil.

Conservation is part of the SD agenda, and was addressed in SDS III via such initiatives as eco-efficiency, environmental management practices and corporate social responsibility. Nevertheless, it could be more explicitly considered as part of the next SD strategy, to find an appropriate balance between supply-side initiatives and DSM savings initiatives, especially at the level of the individual household. Over-consumption of energy is a real side-effect, and a threat, when sustainable development efficiencies are introduced as part of a nation's economic growth strategy. A potentially negative unintended impact of implementing sustainable development strategies is a possible shift in our way of life, serving to mask another problem, that of over-consumption by businesses and consumers.

It should be noted, however, that the evaluation found no credible evidence that this potential unintended impact is significant in extent and scope. This is not to say that the possibility of this unintended impact should be ignored in the next round of SDS IV initiatives. It does represent risks for which mitigating conservation solutions for Canadian society should be considered.

Opportunities could exist to promote greater conservation at the level of the individual household. However, given the inclusion in SDS III of action items supporting demand side management in industry and internal departmental operations, it may be the case that an overall view of missed opportunities could be more perceptual when the entire scope of actions are taken into consideration.

On the positive side, another unintended impact is suggested in the SDS III monitoring reports submitted by responsibility centres. Exhibit 5 in Chapter III shows that twenty-four of the thirty-two action items are considered to have had additional impacts in areas not originally anticipated in the SDS III *Strategy* document. While these possibly unintended impacts are of a "lesser" nature, they nonetheless suggest that action items may have cross-over effects. For example, while some action items are primarily focused on achieving "investment in R&D infrastructure" and "technology commercialization and adoption", they also purportedly result in secondary benefits for "HR development."

5.5 Status of SDS III Action Plans Compared to Targets

SDS III is scheduled to conclude in 2006. Progress has been made on all 32 action items. Overall, as Exhibit 15 shows, as of September 2005 there was no action item reported in the "planning" phase. Out of 32 action items, the department is near fulfilling, has fulfilled, or

exceeded requirements[22] in 22 action items, and is making good progress (at "mid-point") towards completing another 7 items. Three action items were reported to be at an "early implementation" phase, but have nonetheless achieved several identifiable results.

Fifteen of the action items are new initiatives in SDS III. The balance of 17 action items represents carry over initiatives from SDS I and/or SDS II.

Exhibit 15: SDS III Activity Structure

IC SDS III Strategic Outcome Area	IC SDS III Action Item	Status								
		New in SDS III	Carry Over from SDS I	Carry Over from SDS II	Planning	Early Implement	Mid-point	Late Impl.	Complete	Ongoing
Increase commercialization & adoption of eco-efficient tools & technologies										
Capacity building in R&D and skills	1. Canadian Foundation for Innovation (CFI)			✓						✓
	2. Networks of Centres of Excellence (NCE)		✓	✓						✓
	3. Advancing the Bio-Based Economy	✓					✓			
	4. Promoting Nanotechnology Awareness	✓					✓			
	5. Human Capital Development	✓					✓			
Promoting Technology Innovation	6. Technology Partnerships Canada (TPC)		✓	✓						✓
	7. Pre-Competitive Applied Research Network (PRECARN)		✓	✓				✓		
	8. Promoting 25-percent Increase in New Vehicle Fuel Efficiency	✓							✓	
	9. Advancing the Hydrogen Economy			✓		✓				
	10. Promoting Renewable Energy in the Marketplace	✓					✓			
Applying the Tools in the Marketplace	11. Roadmaps (TRM) for Planning Climate Change Technologies		✓	✓				✓		
	12. Promoting Building Solutions for GHG Emissions Reductions	✓					✓			
	13. Advancing Sustainable Manufacturing Practices	✓				✓				
	14. Increasing Environmental Stewardship in SMEs	✓							✓	
	15. Advancing Environmental Supply Chain Management Tools	✓						✓		
	16. Promoting Canadian Climate Change Technologies & Services			✓					✓	
Increase use by industry, institutions, and communities of corporate responsibility and sustainability practices										
Promoting Corporate Responsibility and Sustainability	17. Advancing Sustainable Development Policy Frameworks	✓								✓
	18. Broadening CSR Awareness in Canadian Industry	✓						✓		
	19. Developing CSR Tools and Management Capacity		✓	✓				✓		
	20. Increasing Quantity, Quality, and Credibility of CSR			✓			✓			
	21. Facilitating Establishment of Electronic Products Recycling			✓				✓		
	22. Demonstrating Electronic Stewardship for the Internet			✓			✓			
Advancing Local and Global Sustainability	23. ICT Reuse and Recycling			✓						✓
	24. Application of ICT to Improve Underserved Communities	✓				✓				
	25. Promoting the Aboriginal Business Development Program	✓								✓
	26. SCI to Improve Sustainability of Cities in Developing Countries		✓	✓				✓		
Enhance capacity of Industry Canada's sustainable development management system* **										
Improving Sustainable Development Planning, Performance Measurement, and Evaluation	27. Integrating SD into IC's Planning and Reporting Frameworks			✓				✓		
	28. Renewing the Greening Operations Plan		✓	✓						✓
	29. Updating the Sustainable Development Evaluation Initiatives	✓							✓	✓
	30. Improving Sustainable Development Training and Awareness		✓	✓				✓		
	31. Promoting SD Through Senior Management Champions		✓	✓				✓		
	32. Supporting IC's SD Challenge, University of Cycling Initiative	✓							✓	

[22] These action items are reported as being in a "late implementation phase", "completed" or "ongoing", and most or all of their intended activities and deliverables have been accomplished.

VI. Effectiveness of SDS III

The focus of this chapter of the report is on the cost-effectiveness of the approach that Industry Canada has followed in delivering the SD action items; the effectiveness of the reporting system for SDS III; and constraints encountered in implementing the action items.

6.1 Cost-Effectiveness

This section deals with the following evaluation question:

- Are the SDS III initiatives cost-effective?

The operating costs of SDS III action items were mostly rolled into existing budgets of branches. Some responsibility centres provided estimates of level of resources (person years and funds) that would be needed to deliver their respective action items. The following table summarizes this information for twelve action items.

The average person-years from this sample is just over 1 person-year per action item. Estimated funds range in the $100+K, per action item.

Exhibit 16: Sample of Estimated Resources

ACTION ITEMS	2004	2005	2006	2004	2005	2006
	PYs	PYs	PYs	$'000	$'000	$'000
Bio-based Industrial Products	2.0	3.0	3.0	250	250	200
Climate Change Technologies	1.5	1.5	1.5	267	267	267
CSR Management Guide	0.5	0.5	0.5	45	45	45
Electronic Products Recycling	0.5	0.3	0.3	15	15	15
Environmental Stewardship in SMEs	1.5	1.5	1.5	100	100	100
Canadian Green Chemistry Network	1.0	1.0	1.0	25	25	25
Nanotechnology	1.0	2.0	2.0	150	150	150
Research Studies on SD	0.5	0.5	0.5	30	45	45
SD Policy Frameworks	2.0	2.0	2.0	20	20	20
Supply Chain Management Tools	0.5	0.5	--	250	200	--
Sustainable Manufacturing	3.0	3.0	3.0	80	60	60
Technology Roadmaps	--	--	--	150	150	150
TOTAL	**14**	**15.8**	**15.3**	**$1,383**	**$1,329**	**$1,080**
AVERAGE	**1.2**	**1.3**	**1.3**	**$115.25**	**$110.75**	**$90.00**

These figures do not include larger action items associated with major program expenditures such as those of Precarn and the Sustainable Cities Initiative (SCI), or the Canadian Foundation for Innovation. Precarn estimated about $3 million a year worth of R&D funding going to SD-related projects that it supports, administered through 1 person-year. SCI estimated in the range between $1 million and $4 million a year of its funding going to SD-related activities relevant to SDS III, for over 16 designated sustainable cities.

It is generally concluded, for example from previous separate evaluations of Precarn and Canadian Foundation for Innovation, that these programs compare very-well with other federal grants and contributions programs in terms of cost-effectiveness. This is essentially because, for a relatively small number of person-years, accounted for in operating budgets, a large amount of program funds are disbursed on R&D with a significant amount of leverage for matching funds from the private sector, and from other levels of government. SDS III is in a sense "piggy-backed" onto these significant programs, and the benefits accrue from steering some of the funded project activities to sustainability issues and related technology development.

Interviews with responsibility centres, for the above action items in Exhibit 16, suggest that SDS III has been a very cost-effective delivery model for IC. For example, one responsibility centre remarked "… all of our initiatives are cost-shared and we work closely with our partners. For that reason, I can not think of any more effective approaches to be taken." Moreover, several interviewees have suggested that the roughly 1.2 to 1.3 person-year average per action item, estimated in Exhibit 16 above, may even have been too high an estimate, in the actual course of implementation of the action items. Many of the responsibility centres have multiple responsibilities, their SDS III projects being only a part of their full complement of roles and duties. The real PYs per action item, on average, may be well less than 1 PY.

6.2 Assessment of Reporting System for SDS III

Accountability requirements—Industry Canada's accountability reporting system for SDS III has substantially improved from previous SD strategies. The new monitoring system implemented during SDS III has allowed for a more systematic approach, enabling IC officials to effectively roll-up results and provide both succinct and comprehensive performance reports on targets and activities to the Deputy Minister. Unlike previous evaluations (SDS I and SDS II), none of the SDS III responsibility centres that were interviewed for this evaluation identified any substantial issues with the reporting system. One observation concerned the frequency of reporting (i.e., "make it annual"), and one observation suggested that each action item responsibility centre provide a final "roll-up report" for the three-year period, once the action item is deemed completed. Another suggestion was that IC should consider more "proactive ways to disseminate more information on benefits of SD, and as a result receive more applications to fund SD."

The department also reports on its sustainable development performance in the *Departmental Performance Report* (DPR), which presents sustainable development accomplishments against planned performance expectations set out in the *Report on Plans and Priorities* (RPP). IC was able to effectively report on SDS III progress in its most recent DPR for the period ending March 31, 2005. It was further able to provide more detailed SDS III results on performance information by posting the progress of its 32 action items on the web (**strategis.gc.ca/sd**), thereby fulfilling a commitment it made in the 2002-03 DPR to provide more comprehensive performance information to the public, as recommended by CESD and Treasury Board Secretariat.

SD Website—The SD website has evolved into a robust vehicle for information dissemination on sustainable development, both for the public, for industry, and for updates and information sharing within the department itself. Considerable progress has taken place during SDS III in making the website relevant and timely. The department has also committed to continuing to improve this important vehicle as an enabler for advancing the SD agenda in Canada. As part of the reporting mechanism for SDS IV, website "hits" were monitored by the department. Exhibit 17 shows that from 2004 to 2005, the SD website hits increased from 23,379 to 25,670.

Exhibit 17: Indicators for SDS III Action Items

	2004	2005
Jan	1681	2491
Feb	2228	2583
Mar	2788	2518
Apr	1631	1936
May	1501	2045
June	1652	1520
July	1908	1552
Aug	1809	1623
Sept	2176	1911
Oct	1736	2,739
Nov	2176	2746
Dec	2093	2006
TOTALS	23379	25670

Measuring results—In a 2004 assessment of the quality of departmental strategies by the Commissioner of the Environment and Development, Industry Canada was deemed to be "meeting expectations" in terms of linking its SD goals and objectives with targets and actions.[23] In terms of having clear and measurable targets it was ranked as "meeting expectations to some degree." In the latter case, IC is among the majority of departments facing the challenge of reporting on results of SD-related actions on high-level indicators such as "impacts on reduction of GHG emissions", "level of influence in providing policy advice", "level of awareness created through information dissemination and outreach efforts", and "strengthened market positioning of renewable energies in Canadian and international markets". These are indicators associated with some of the SDS III action items (see Exhibit 17) that are difficult to report on credibly, on an ongoing basis, without an appropriate monitoring budget and operational approach, at the action item level, to gather relevant evaluative information as activities and deliverables evolve and mature. Moreover, some of these indicators are typically longer-term in nature and difficult to assess in terms of attribution to specific IC SD-related action items, which are mostly implemented with multiple

[23] *2005 Report of the Commissioner of the Environment and Sustainable Development*, Chapter 7, Exhibit 7.3.

partnerships. During SDS III, out of 32 action items 28 were implemented with several external partners – for example, partners in industry, academia, non-profit organizations, other government departments, provinces and municipalities. The remaining 4 action items were implemented through partnerships within IC, across different branches.

In spite of the challenge of measuring results, as described above, it would be appropriate for the department, and SDS III responsibility centres, to address this issue by attempting to provide more systematic information (including substitute or alternative information if appropriate) on the indicators set-out in Exhibit 18, during the remaining reporting periods of the strategy – or give an explanation why this is not being provided.

As a general comment for developing SDS IV indicators, more care and attention should be paid by responsibility centres in choosing indicators to measure outcomes, and the availability and reliability of data sources for these indicators.

Monitoring templates—A new template for reporting on SDS III action items was introduced in 2004. Officers from responsibility centres across the department had previously experienced technical difficulties with the Intranet-based SD monitoring and reporting system. To ensure a more effective and efficient reporting system for the new SDS, the Strategic Policy Branch (SPB) developed a WordPerfect reporting template based on the structure used in the two-page action items, which underpin each of the strategy's action items. This new template provided some pertinent performance progress indicators, and by most accounts was appreciated by responsibility centres in that it eased the burden and allowed them to enhance the information they provided. Essentially, this system worked because there was a manageable number of action items – 32 in SDS III compared to 58 in SDS II.

Challenge—There is no longer a requirement to incorporate sustainable development planning into the RPP – it is now optional. This has the potential to make it difficult to engage the department on the importance of sustainable development, and on adequately reporting on substantial results being achieved through SD action items.

6.3 Constraints

Out of the thirty-two SDS III action items twenty-two responsibility centres reported no significant barriers in delivering their SD initiatives. Only two responsibility centres indicated staff-turnover was a constraint. Altogether, ten responsibility centres reported the following noteworthy other constraints.

The main constraint indicated by interviewees within Industry Canada is that their SDS III action items are mainly delivered from within existing branch-level budgets, and from funding mechanisms available to them that have to respond to competing priorities and requirements. In other words, there is not a dedicated SDS III budget, earmarked for most of the projects undertaken, directly under the sponsorship of the strategy. Seven of the thirty-two action items indicated resources as a constraint.

Exhibit 18: Indicators for SDS III Action Items

Innovation Towards Sustainable Development *

Capacity building in R&D skills

- Level of influence in providing policy advice and support to CFI project funding decisions
- Perceived influence of support to NCE project applicant assessment and selection process
- Level of awareness created through information dissemination and outreach efforts
- Level of support for the development, attraction and retention of highly qualified people

Promoting technology innovation

- Number of sustainable development projects funded by TPC
- Number of sustainable development projects funded per annum (PRECARN)
- Percent of new light vehicles with improved fuel efficiency
- Increased hydrogen and fuel cell commercialization and early adoption
- Strengthened market positioning of renewable energies in Canadian and international markets

Applying the tools in the marketplace

- Number of technologies identified, and number of industry commitments to technology development and commercialization-related actions arising from a TRM
- Extent of greenhouse gas emissions reductions in buildings
- Number of companies that have implemented innovative manufacturing practices
- Number of companies that have implemented environmental stewardship practices
- Number of companies that have implemented environmental supply chain management tools
- Number of Canadian companies awarded contracts in overseas markets for environmental technologies and services

Corporate and Community Sustainability *

Promoting corporate responsibility and sustainability

- Effective and efficient regulatory regime for environmental protection
- Enhanced knowledge and awareness by Canadian industry of CSR
- Number of Canadian companies implementing CSR management tools and/or practices
- Number of new reporters per annum
- Implementation of stewardship programs across Canada for electronic products
- Level of participation and support for the Media Awareness Network's Web Awareness Canada initiative and Cybertip

Advancing local and global sustainability

- Number of computers distributed to schools and libraries, and metric tons diverted from landfills to CFS re-use activities
- Number of communities served, equitable access to the Internet
- Number of Aboriginal businesses receiving Aboriginal Business Canada contribution funding
- Development of roadmaps with SCI partner cities, identification and implementation of projects

Sustainable Development Capacity Building Within Industry Canada *

Improving sustainable development planning, performance measurement and evaluation

- Extent of further integration of sustainable development language and commitments in corporate planning documents
- Data on procurement, automotive fleet operations, non-hazardous materials and solid waste
- Completion of Mid-term Evaluation of SDS III
- Completion of SDS IV internal scan
- Development of SDS IV evaluation framework
- Number of participants in courses, lectures and workshops
- Level of senior management support
- Number of participants registered in sustainable development challenges
- Calculated emission reductions
- Fitness level of employees

* These performance indicators were identified by SDS III responsibility centres for their respective action items. These indicators were also published in the *SDS 2003-06* strategy document, and the IC *2005-2006 Report on Plans and Priorities*.

One of the strengths of most of the SDS III projects is the partnership arrangements that they have developed over a long period of time. Twenty-eight of the action item responsibility centres reported partnerships with external stakeholders (other federal government departments, provincial governments, private and non-government organizations, academia, and other institutions and associations); and four reported internal partnerships within the department, across IC branches. These partnerships have been very effective in all the action items in engendering SD initiatives. On the other hand, the process of collaborating with partners does require a commitment to dialogue and consultation; and this often takes lengthy periods of time, to initiate and launch projects and activities involving multiplicities of interests and interest groups. While this is accepted as part of "doing business" in addressing sustainable development, it does need to be managed in a way that effectively advances the SD agenda. The challenge is that responsibility centres often need to juggle priorities within their individual mandates to address requirements for coordinating partnership activities in an effective way. This is recognized as not always an easy thing to do.

Another constraint suggested by some of the responsibility centres that were interviewed, is that in situations where broad and cross-cutting initiatives are involved, senior federal officials need to participate in the process. Garnering the support of the senior federal officials is often seen as a major challenge, to provide the appropriate support and profile for the SD work they are pursuing, and that IC is committed to.

In the action items involving support to R&D activities (e.g., Precarn, granting councils, NCEs), there is a complexity of bringing research and policy communities across government together, to focus on SD-related concerns and issues. For the project officer managing a related SDS III action item, such as nanotechnology, this is a constraint. For example, the challenge of identifying stakeholders in industry becomes significant, because nanotechnology is a technology, not a recognizable industry from a policy perspective. The potential benefits of nanotechnology on the other hand, as a cross-cutting technology is enormous. It has been estimated that the global nanotechnology market will reach USD 29 billion by 2008.[24]

In action items where negotiations are involved with private sector interests (e.g., negotiating the MOU for GHG emissions reductions in the auto-industry, negotiating contribution agreements for R&D initiatives, negotiating Broadband implementation agreements), slow progress in the initial phases of this process requires long-term commitments to allow for the results to mature. IC has demonstrated great strength in persevering with its contribution to these initiatives, in a way that leads to positive results. Nonetheless, the process in some of the action items involving private sector interests is seen as a constraint by some of the IC officials interviewed.

Finally, in action items where there are split responsibilities between two or more branches, this is seen by at least two responsibility centres as potentially a constraint, in that it could slow down progress of initiatives due to competing priorities. However, for the most part, interviewees suggested that this is just considered as a challenge to overcome than a constraint per se that hampers progress.

[24] ISO Focus: The Magazine of the International Organization for Standardization, Vol. 3, No. 1 January 2006, page 44.

VII. Lessons Learned and Recommendations

The lessons learned, from the design and delivery of SDS III, are presented in this chapter of the report. The following specific research question is addressed:

- What are the lessons learned from SDS III, based on factors that might have facilitated and/or impeded the implementation of the strategy?

Recommendations associated with the lessons learned are also presented.

Making progress—Industry Canada has substantially progressed since SDS I and SDS II in focusing its sustainable development agenda around outcomes relevant to the department's mandate. SDS III consolidated various SD initiatives underway within the department into 32 action items focused around three key objectives of the strategy: achieving innovation towards sustainable development; achieving corporate and community sustainability; and achieving SD capacity building within the department. ***Recommendation:*** *Industry Canada should ensure that SDS IV action items remain at a manageable optimum number, building on the lesson learned from SDS III, which consolidated action items from 58 in SDS II to 32.*

Intra-departmental dialogue—SDS III is a success in that it has been implemented horizontally across the department, in a distributed management model (i.e., a "whole of department" approach). Intra-departmental sharing of responsibilities for components of action items was a strong point of the implementation process. Reporting mechanisms and online access to information via the SD website were also substantially improved from previous SD strategies, enabling intra-departmental interaction and information sharing. Lack of occasional face-to-face dialogue across SDS III responsibility centres from different branches, however, was highlighted by some responsibility centres as a gap in the implementation strategy. ***Recommendation:*** *To encourage a more "people-centric" approach during SDS IV, it is recommended that SDS IV organizers initiate periodic seminars (perhaps once a year) to engage participants and responsibility centres to share their results, and to benefit from the synergies of inter-disciplinary and professional dialogue.*

Reporting—While Industry Canada's SD reporting system has substantially improved from previous SD strategies, the reporting system could benefit from a cumulative end-of-project report for each action item. ***Recommendation:*** *Once an action item has been completed, the responsibility centre should prepare a cumulative report that addresses the key metrics of performance and the expected outcomes from that item.*

Partnerships—An opportunity exists for establishing greater consistency between an SD strategy and the needs of IC's stakeholders, by increasing the level of meaningful interaction with the private sector and other stakeholders, throughout the strategy period. The first strategies (SDS I and II) established an interactive consultation process with external stakeholders early in the design stage, with some interactions during the lifetime of the strategy.

SDS III has improved the level of interaction with external stakeholders by establishing or participating in consultative processes and mechanisms throughout the life of the strategy. The department's interaction and teamwork with the private sector and other stakeholders has been an ongoing participatory process, resulting in spin-off benefits for SD activities and initiatives outside the department's sphere. ***Recommendation:*** *Industry Canada should continue to build on the positive impacts of its partnerships, forged through SD action items, to advance sustainable development.*

Anticipating the Requirements of a Cumulative Evaluation of SDS I, II, and III— The recent RMAF study for IC's SDS initiatives (March 2005) recommended that a summative evaluation include case studies as an approach to address the challenge of measuring SD strategy results, e.g., case studies of Precarn-funded projects, sustainable cities, greening operations, sustainable manufacturing, corporate sustainability reporting, technology roadmaps, and recycling computers. ***Recommendation:*** *Systematically build an inventory of narratives on success-stories and case studies, identifying lessons learned and best-practices from SDS action items.*