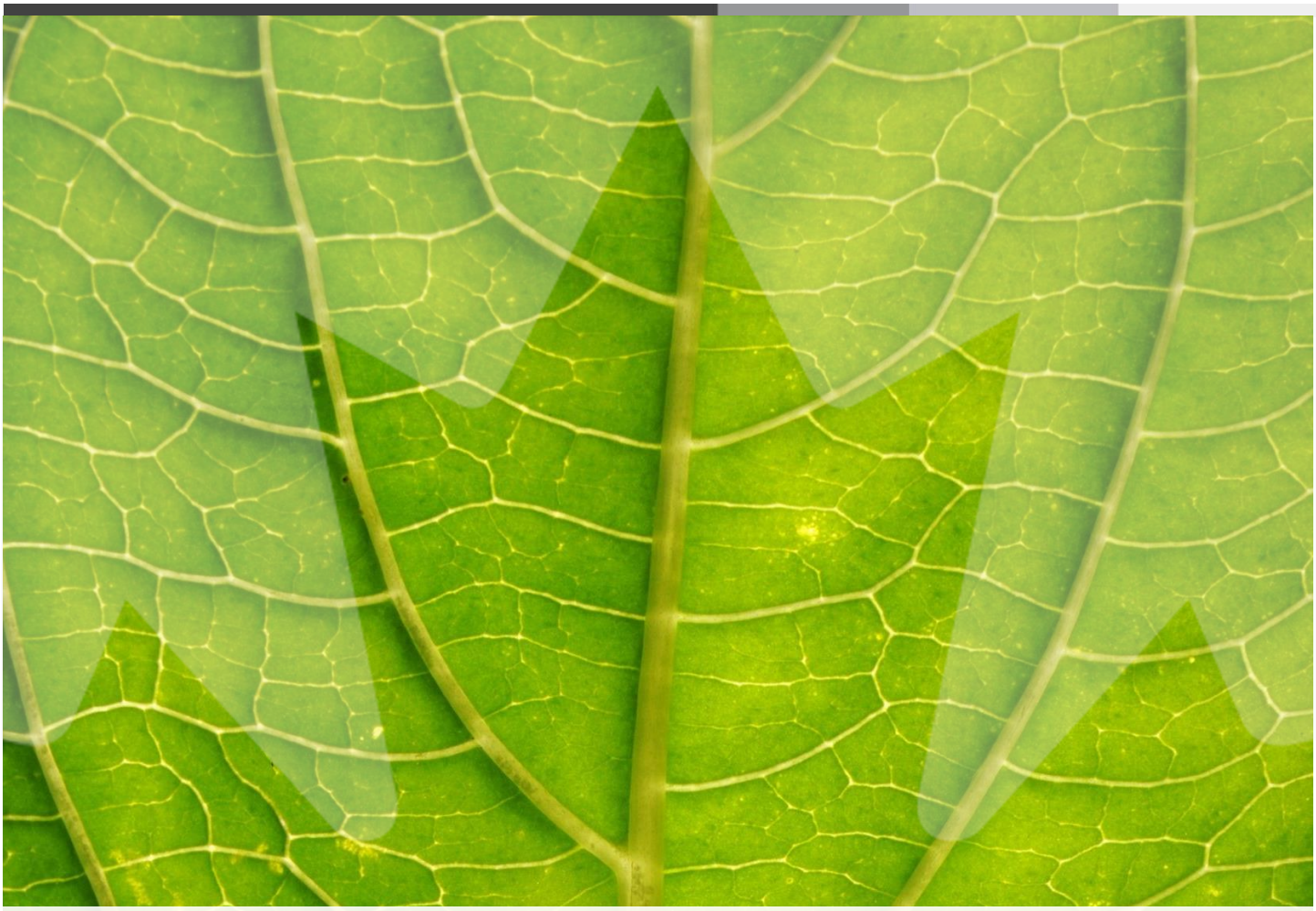
Innovation, Science and Economic Development Canada
Innovation, Sciences et Développement économique Canada



2015-2016

Progress Report on the Sustainable Development Strategy

Canada

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On November 4, 2015, as part of the creation of the new ministry, the names of several departments changed to reflect the government's priorities. Following these changes, Industry Canada's applied title became **Innovation, Science and Economic Development Canada** (ISED).

2015-2016Progress Report

Innovation, Science and Economic Development's 2015-2016 Progress Report on the Sustainable Development Strategy contains the following elements:

1. Innovation, Science and Economic Development's Sustainable Development Vision Statement

2. Strategic Environmental Assessment Report

3. Progress Report on Innovation, Science and Economic Development's Contributions to Themes I to III of the 2013-2016 *Federal Sustainable Development Strategy*

4. Progress Report on Innovation, Science and Economic Development's Contributions to Theme IV of the 2013-2016 *Federal Sustainable Development Strategy*

The 2013-2016 Federal Sustainable Development Strategy was tabled in Parliament in November 2013. The 2013-2016 Federal Sustainable Development Strategy guides Innovation, Science and Economic Development's (ISED) sustainable development strategy for 2015. ISED's 2015 strategy fully aligns with the federal strategy and supports its enhanced economic dimension through the integration of sustainable consumption and production principles and practices wherever possible.

Sustainable consumption and production (SCP) practices can be considered the economic dimension of sustainable development. Advancing SCP patterns in the economy and society can help make progress towards sustainable development and long-term economic prosperity. Effective SCP is dependent on innovation and technology as it aims to deliver high functional value while minimizing resource use and environmental impacts. At the 2012 United Nations Conference on Sustainable Development in Rio de Janeiro, Brazil, Canada signed onto a multilateral agreement that included a voluntary framework on SCP—the 10 Year Framework of Programs, which lists notable SCP programs and practices, such as the development of sustainable products, processes and business models, and involves sustainable sourcing, production, and distribution; eco-efficiency and waste reduction; and influencing consumer choices.

In September 2015, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development were adopted by world leaders, including Canada. ISED supports the SDGs through the department's Implementation Strategies, including Goal # 12: *Responsible Consumption and Production*, which aims to ensure SCP patterns, are promoted and developed. Making progress towards SCP is a long-term process that requires the active engagement and leadership of many actors, including industry. The participation of the private sector, including small- and medium-sized enterprises, is critical.

1. Innovation, Science and Economic Development's Sustainable Development Vision Statement

In support of innovation and competitiveness, ISED works with key partners to promote the benefits of sustainable development, and to encourage the greater adoption of sustainable technologies and practices by Canadian businesses, consumers and communities.

The Sustainable Development Vision Statement builds on ISED's mandate and acknowledges the key role that ISED has in fostering innovation and competitiveness, and promoting awareness of the economic benefits of sustainable development practices for businesses, consumers and communities.

ISED will strive to be guided by this vision statement in policy and program development and implementation. As Canadian business, consumers and communities adopt sustainable technologies and practices, there are likely to be positive benefits for the environmental goals of the 2013-2016 *Federal Sustainable Development Strategy* —protecting air, water, nature and Canadians.

2. Strategic Environmental Assessment

ISED's Strategic Environmental Assessment policy complies with the requirements of the *2010 Cabinet Directive on Environmental Assessment of Policy, Plans and Programs* and the 2010 Guidelines to the Cabinet Directive. The policy requires that the 2013-2016 Federal Sustainable Development Strategy goals and targets be taken into consideration in the ISED decision-making process. In addition, ISED has strengthened the Strategic Environmental Assessment management system to ensure that the policy is effectively implemented across the department and has made these tools available to ISED employees.

During 2015–2016 reporting cycle, ISED conducted a strategic environmental assessment (SEA) for all of its initiatives subject to the *2010 Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals.* In this period, the department conducted a total of 30 SEAs, all of which were preliminary scans. According to the Cabinet Directive, SEA Public Statements are not required unless a full SEA is completed. However, as

recommended by the Commissioner of Environment and Sustainable Development in her 2015 Fall Report: *Departmental Progress in Implementing Sustainable Development Strategies*, ISED has issued 2 SEA public statements.

An SEA was completed for the Standards Council of Canada (SCC) Standards to Support Resilience in Infrastructure Codes and Guides and determined that it is likely to have important positive direct and indirect environmental effects over the longer term which will serve to advance the goals and targets of the 2013-2016 Federal Sustainable Development Strategy (FSDS). An analysis of these programs found positive indirect environmental effects as enhanced standards can provide design professionals, regulators, owners, and operators with the tools to improve infrastructure resiliency, thus advancing Goal 1 and Target 1.2 of the FSDS (Climate Change Adaptation). An SEA public statement is published on ISED's SEA Public Statements page.

An SEA was completed for the Post-Secondary Institutions Strategic Investment Fund (SIF). An analysis of the program determined that the SIF will likely have positive direct and indirect environmental effects over time which will serve to advance *Target 1.1: Climate Change Mitigation, Target 2.1*: Outdoor Air Pollutants, and *Target 3.11*: Wastewater and Industrial Effluent of the FSDS. Enhanced research infrastructure may reduce Canadian research facilities' environmental footprint and strengthen their capacity for research, innovation and industry-related training. An SEA public statement is published on ISED's SEA Public Statements page.

3. Progress Report on Innovation, Science and Economic Development's Contributions to Themes I to III of the 2013-2016 *Federal Sustainable Development Strategy*

Implementation Strategy 1.1.3

Continue to work with industry stakeholders to encourage and promote the adoption and adaptation of new technologies such as aerospace.

Link to FSDS Goals and Targets

- **Theme I** Addressing Climate Change and Air Quality
    - **Goal 1** Climate Change: Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change

- **Target 1.1** Climate Change Mitigation: Relative to 2005 emissions levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020

Link to ISED's PAA

- **Strategic Outcome 2:** Advancements in science and technology, knowledge, and innovation strengthen the Canadian economy
    - **Program:** Science, Technology and Innovation Capacity
        - **Sub-Program:** Science and Technology Partnerships
    - **Program:** Industrial Research and Development Financing
        - **Sub-Program:** Aerospace innovation

Description of the Implementation Strategy

Aerospace:

The Green Aviation Research and Development Network (GARDN) fosters development of technologies that will reduce the environmental footprint of the aerospace industry in a broad range of areas, from noise and emissions to materials and manufacturing processes. The objective of the GARDN is to provide collaborative opportunities for the original equipment manufacturers, small and medium enterprises, universities and other key stakeholders in the areas of environmental technologies. ISED will continue to participate as an Ex-Officio member of the Board of Directors of GARDN.

GARDN II, the second term of the initiative, has a budget of close to $24 million earmarked for the second term that is funded equally by the federal government and participating aerospace companies, and will focus on three key themes: quiet, clean and sustainable technologies. GARDN II has already announced the launch of nine research and development projects, representing more than $15 million in funding. Beyond their environmental benefits, the projects are expected to have a positive impact on Canadian aerospace products and services, the business success of companies, and the training and development of highly qualified personnel.

Relationship with FSDS Target(s)

GARDN is intended to assist the Canadian aviation industry in reducing its environmental footprint and meeting environmental and sustainability requirements (in operation and manufacturing) through innovation in environmental technologies, infrastructure development, and collaboration across the industry.

CANARIE's work under the Research Middleware Program will also help advance the FSDS Theme 2: Maintaining Water Quality and Availability.

Non-Financial Performance Results

Planned outcomes include: science and technology partnerships exist between industry and academia; and government, academic and industrial partners collaborate to minimize the aerospace, information and communications technologies industries' impacts on the environment.

Performance Measures

GARDN:

- Dollars of cash and in-kind industrial and other contributions leveraged per dollar investment for the GARDN
- Number of companies involved in GARDN

Performance Results

ISED continues to participate as an Observer member of the Board of Directors of the GARDN. The initiative is supported by the Business-led Networks of Centres of Excellence (BL-NCE), which participates as an Ex-Officio member of the Board of Directors.

Implementation Strategy 1.1.4

Continue to implement the Strategic Aerospace and Defence Initiative (SADI) in support of strategic research and development (R&D) projects that contribute to new aerospace and defence technologies, and may lead to the reduction of GHG emissions and produce new energy efficiencies.

Link to FSDS Goals and Targets

- **Theme I** Addressing Climate Change and Air Quality
    - **Goal 1** Climate Change: Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change

- **Target 1.1** Climate Change Mitigation: Relative to 2005 emissions levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020

Link to ISED's PAA

- **Strategic Outcome:** Advancements in science and technology, knowledge, and innovation strengthen the Canadian economy
    - **Program:** Industrial Research and Development Financing
        - **Sub-Program:** Aerospace and Defence Innovation

Description of the Implementation Strategy

The Strategic Aerospace and Defence Initiative (SADI) has three objectives: encourage strategic R&D that will result in innovation and excellence in new products and services; enhance the competitiveness of Canadian aerospace and defence companies; and foster collaboration between research institutes, universities, colleges and the private sector. Although the environment and sustainable development are not explicit objectives of SADI, an ultimate outcome of the program is to contribute to the achievement of broader technological, economic, environmental and social benefits for Canadians.

In 2015–16, it is expected that additional SADI projects will be approved, some of which may result in the reduction of GHG emissions and produce energy efficiencies.

Relationship with FSDS Target(s)

Under SADI, approved projects may result in environmental benefits which help advance the goals and targets of the FSDS. For example, some projects may report a reduction of GHG emissions and energy efficiency (Goal 1: addressing air quality and climate change) and a reduction in material waste and conservation of natural resources (Goal 3: Protecting Nature and Canadians).

Non-Financial Performance Expectations

SADI's ultimate outcome is to contribute to the achievement of broader technological, economic, environmental and social benefits for Canadians.

Development and commercialization of innovative products, processes, services and technologies may have an environmental benefit for Canada.

Performance Measure

- Percentage of projects demonstrating broader environmental benefits to Canada (e.g. increased energy efficiency, conserved renewable and non-renewable natural resources, increased production efficiencies and/or reduced material usage)
- Number of projects to date in which the recipient has commercialized a new product, service or process as a result of ISED financing
- Dollars to date of investment leveraged per dollar of ISED disbursements in aerospace and defence R&D projects
- Number of projects to date for which the recipient has established a collaborative relationship with universities, colleges and/or affiliated research institutes

Performance Results

- As of March 31, 2016, 24 of 39 SADI projects have reported environmental benefits such as reduction in material waste, energy efficiency and conservation of natural resources.

Implementation Strategy 1.1.5

Continue to support the development and promote the use of corporate social responsibility (CSR) management tools by industry and the use of CSR standards in the Canadian marketplace in support of sustainable consumption and production, innovation and competitiveness.

Link to FSDS Goals and Targets

- **Theme I** Addressing Climate Change and Air Quality
    - **Goal 1** Climate Change: Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change
        - **Target 1.1** Climate Change Mitigation: Relative to 2005 emissions levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020

Link to ISED's PAA

- **Program:** Internal Services

Description of the Implementation Strategy

Under this implementation strategy, ISED will:

- Continue to develop information and management tools for business to help them integrate CSR principles and practices into their core business strategy and daily operations in support of their competitiveness in the global marketplace.
- Continue to post resources on the ISED CSR website, such as the 2014 CSR Implementation Guide for Canadian Business, Small and Medium Enterprise (SME) Sustainability Road Map, and the CSR Tool Kit for Business;
- Undertake strategic outreach activities to enhance effectiveness and reach of these tools; and
- Continue to promote CSR performance and reporting standards and practices relevant to Canadian business.

Relationship with FSDS Target(s)

Increased integration by the private sector of CSR practices and principles into core business strategy and daily operations will have a positive impact on all of the environmental goals of the FSDS. CSR practices that can help reduce GHG emissions include: eco-efficiency, which leads to reduced energy consumption; rationalization of fleets towards more fuel efficient transportation; design for environment/sustainability (DfE, DfS); life cycle analysis (LCA); sustainable/lean manufacturing practices and extended producer responsibility (EPR), which help reduce natural resource inputs into the production of products, thus reducing GHG emissions; and protecting water and nature resources. The integration of CSR practices can make a positive contribution to the realization of sustainable consumption and production patterns in Canada.

Non-Financial Performance Expectations

The ultimate goal is to increase the number of Canadian companies integrating CSR practices into their core business strategy and daily operations, including supply chain mandates. An indicator of this would be the growing number of stand-alone and integrated CSR reports being produced by Canadian companies and posted online, particularly those following international standards on CSR disclosure and transparency, such as the Global Reporting Initiative (GRI). As Canadian businesses become increasingly aware of the business case for CSR integration and voluntary CSR standards are increasingly utilized by Canadian business, Canadian industry and SMEs may increase their competitiveness.

Performance Measures

- Number of strategic outreach activities undertaken with a CSR dimension
- Number of Canadian businesses issuing CSR reports

- Number of visits to ISED CSR website
- Number of downloads of ISED CSR website material

Performance Results

In 2015–16, ISED:

- Published a blog for SMEs on the Canada Business Network *Making CSR work for you*.
- Published the renewed *CSR Implementation Guide for Canadian Business*.
- Participated in the Corporate Responsibility and Sustainability Summit 2016 hosted by the Conference Board of Canada in Toronto.
- Supported work related to the drafting of the G7 Leaders' Declaration of June 2015 and G7 Employment and Development Ministers' Communiqué of October 2015 on promoting sustainable supply chains and fair production.
- Supported the development of an Arctic Responsible Investment Protocol under the Arctic Council and for discussion at the World Economic Forum in Davos in January 2016.
- Raised awareness of international CSR reporting and performance standards endorsed by the government. More specifically, ISED participated in the National Contact Point (NCP). The NCP is an interdepartmental committee chaired by the Department of Foreign Affairs, Trade and Development whose role is to promote awareness of the OECD Guidelines for Multinational Enterprises as it relates to the social, economic and environmental impact of their activities on the societies in which they operate. ISED participated in the NCP's annual stakeholder outreach session to promote awareness of the Guidelines.
- The ISED CSR website received more than 93,000 visits (down from the previous year);
- Based on Global Reporting Initiative (GRI) data, 126 Canadian organizations submitted CSR reports in 2015, 91 of which used the GRI G4 framework. Compared to 2014, that is an increase of 3 Canadian organizations reporting to GRI, but a decrease of 4 using the GRI framework.
- Based on United Nations Global Compact data, there has been a 70% growth in the number of Canadian companies joining the Compact in 2015, and a 125% growth between June 2013 and April 2016 for a current total membership of 158 Canadian

signatories to the UN Global Compact. This number does not include the growing number of multinational enterprises that joined the Compact that have subsidiaries in Canada. Also, the number does not include the Canadian companies that are 'learning participants' of Global Compact Network Canada. SMEs constitute 46.2% of the participants out of a total of 158 companies.

Implementation Strategy 1.1.8

Continue to work with key stakeholders to ensure that consumers have the information and tools needed to protect their interests, while engaging in, and supporting, research and policy development on consumer issues such as sustainable consumption.

Link to FSDS Goals and Targets

- **Theme I** Addressing Climate Change and Air Quality
    - **Goal 1** Climate Change: Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change
        - **Target 1.1** Climate Change Mitigation: Relative to 2005 emissions levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020

Link to ISED's PAA

- **Strategic Outcome 1:** The Canadian Marketplace is Efficient and Competitive
    - **Program:** Marketplace Frameworks and Regulation
        - **Sub-Program:** Consumer Affairs

Description of the Implementation Strategy

ISED's Office of Consumer Affairs supports consumer groups and non-governmental organizations to ensure they provide effective input into policy development through its Contributions Program for Non-Profit Consumer and Voluntary Organization, funding over 40 research projects on sustainable consumption since 2002. This work can be found through the Consumer Policy Research Database, which was developed to increase knowledge transfer across the consumer policy research community. The department also works to ensure that consumers have the information and tools needed to protect their interests. This includes the development of ConsumerInformation.ca, an online portal that gives fast and

easy access to accurate, relevant and reliable consumer information, including information on sustainable consumption.

Under this Implementation Strategy, ISED will:

- Promote the web content developed in 2013 on sustainable development for the consumerhandbook.ca, such as tips for green living, responsible product disposal and car sharing.

- Publish sustainable development related content to ISED's Twitter account and News Canada articles, as well as review existing content to ensure that it remains relevant and up-to-date.

- Provide ongoing research and analysis on consumer issues related to sustainable development and sustainable consumption.

- Continue to support research and analysis on relevant and timely consumer issues, including sustainable development and consumption, via the Contributions Program for Non-Profit Consumer and Voluntary Organizations.

Relationship with FSDS Target(s)

Sustainable and responsible consumption practices by consumers can have a positive impact on achieving all the environmental goals in the FSDS. For example, when consumers choose to consider environmental factors when making a purchasing decision, they can influence how the product is made in terms of the amount of natural resources including energy and water used to produce it, the process used to produce it, and whether and how it can be recycled or re-used. These practices can advance sustainable consumption and production patterns across the economy.

Non-Financial Performance Expectations

ISED's planned outcomes include: increased consumers awareness of sustainable consumption/responsible consumption issues and practices; increased integration of sustainable and responsible consumption practices into purchasing decisions; and, decision makers have access to informed analysis on issues affecting Canadian consumers.

Performance Measures

- Number of visitors accessing consumer information on sustainable consumption from ISED

- Number of collaborative research or policy initiatives started or maintained related to sustainable consumption
- Number of times ISED-supported analysis on sustainable consumption conducted by consumer organizations contributes to public policy discussions or media coverage
- Number of sustainable consumption research proposals received for funding under the OCA grants and contribution program
- Number of sustainable consumption research proposals supported annually

Performance Results

- **10,802** visitors accessed consumer information on sustainable consumption from ISED in FY 2015-16.
- **1** collaborative research and policy initiatives related to sustainable consumption were started or maintained in FY 2015-16.
- **8** sustainable-related research proposals were received under the 2016-17 call for proposals under the Contributions Program for Non-Profit Consumer and Voluntary Organizations.
- **1** sustainable consumption research proposal was supported under the Contributions Program for Non-Profit Consumer and Voluntary Organizations in FY 2015-16.

Implementation Strategy 1.1.9

Continue to promote sustainable manufacturing practices to Canadian businesses recognizing that the adoption of technologies and processes that support innovation and competitiveness can also increase environmental sustainability.

Link to FSDS Goals and Targets

- **Theme I** Addressing Climate Change and Air Quality
    - **Goal 1** Climate Change: Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change
        - **Target 1.1** Climate Change Mitigation: Relative to 2005 emissions levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020

Link to ISED's PAA

- **Strategic Outcome 1:** Canadian businesses and communities are competitive
    - **Program:** Industrial Competitiveness and Capacity
        - **Sub-Program:** Industry-Specific Policy and Analysis

Description of the Implementation Strategy

In support of innovation and competitiveness, ISED works with key partners to promote the benefits of sustainable manufacturing by encouraging greater adoption of new technologies and practices that minimize or eliminate production and processing wastes.

Under this implementation strategy, ISED will post information on manufacturing on the Manufacturing Sector Gateway website and encourage greater adoption of advanced, more efficient manufacturing technologies and practices during outreach discussions with targeted stakeholders.

Relationship with FSDS Target(s)

Advanced manufacturing helps to achieve the FSDS environmental goals of addressing air pollution and climate change, maintaining water quality and quantity, and protecting nature as well as Goal 3 of the FSDS to enhance employee, community, and product safety.

Non-Financial Performance Expectations

ISED's planned outcome is ensuring that decision makers have access to informed analysis on trends of Canadian industries.

Performance Measures

- Number of web visits/downloads of advanced manufacturing information from ISED's Manufacturing Sector Gateway website

Performance Results

- There were 9,093 visits to ISED's Manufacturing Sector Gateway website in 2015-16, which includes the link to information on sustainable manufacturing. Visits to the overall website have nearly doubled relative to FY 2014-2015.

Implementation Strategy 1.1.10

Continue to advance environmental sustainability through support to co-operatives as businesses with economic, environmental and social sustainability goals by identifying and addressing barriers and opportunities to co-operative growth, and enabling access to emerging market opportunities.

Link to FSDS Goals and Targets

- **Theme I** Addressing Climate Change and Air Quality
    - **Goal 1** Climate Change: Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change
        - **Target 1.1** Climate Change Mitigation: Relative to 2005 emissions levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020

Link to ISED's PAA

- **Program:** Internal Services

Description of the Implementation Strategy

ISED advances environmental sustainability through its support to co-operatives as businesses with economic, environmental and social sustainability goals. Co-operative businesses, like a growing number of companies, see value in placing sustainability as part of the company's purpose, creating shared value and benefits for members and stakeholders. ISED promotes increased uptake by entrepreneurs of the co-operatives business model by identifying and addressing barriers and opportunities to co-operative growth, and enabling co-operatives access to departmental programs and services in order to capture emerging market opportunities.

ISED will:

- Continue to promote increased uptake by entrepreneurs of the co-operatives business model by raising awareness of the advantages of the model;
- Continue to enable co-operatives' access to government programs and services in order to capture market opportunities; and
- Prepare and release 2010, 2011, and 2012 data from the Annual Survey of Co-operatives providing statistical foundation for research on environmental and sustainability trends with co-operatives.

Relationship with FSDS Target(s)

The growth of co-operative businesses across Canada is likely to have a positive impact on all of the environmental goals of the FSDS—addressing climate change and air quality, maintaining water quality and quantity, and protecting nature and Canadians.

Non-Financial Performance Expectations

ISED's planned outcomes include: increased awareness by entrepreneurs of the co-operatives business model and the support available to them from ISED; increased awareness by entrepreneurs of the co-operative business model and its contribution to sustainable development, particularly with respect to the influence it can have on shifting to sustainable consumption and production patterns in the economy.

Performance Measures

- Percentage of new businesses that utilize the co-operative business model.
- Growth in number of cooperatives in Canada.
- Number of strategic outreach activities undertaken with a co-operatives and sustainability dimension.
- Increased number of requests or usage of co-operative data to increase understanding of co-operatives with environmental and sustainable mandates.
- Increased number of downloads of materials, hits to ISED's co-operatives policy website or requests for information.

Performance Results

- Sources from federal, provincial and territorial business registries indicate an overall increase in the total number of incorporated co-operative corporations in 2015.
- Published *the* *Co-operatives in Canada in 2011* report which showed the sector remains strong and continues to grow with increased business volume, assets, employment, and memberships. The sector has $38.6B in revenues & employs 90,070 people in Canada.
- Published *Co-operatives in Canada in 2010*, *2011 Top 50 Non-Financial Co-operatives in Canada*, *and* *2012 Top 50 Non-Financial Co-operatives in Canada* which also demonstrated positive growth in volume of business, assets, employment and memberships for Canadian co-operative corporations. ISED's research webpage

received 415 visits and 808 views. The *Co-operatives in Canada in 2010* report was downloaded 108 times.

- Released the *2014 Survey on Financing and Growth of Small and Medium Enterprise* which showed that Canadian SME for-profit co-operatives are more likely to be innovative than traditional SME businesses, particularly with respect to product and service innovation, and have better financing authorization and approval rates than traditional SME business models.
- In 2015, the *Co-operatives Policy* webpage received 1,290 visits (108% increase from 2014), 2,147 views (63% increase from 2014) and 256 reference materials were downloaded (24% increase from 2014).
- ISED maintained a high level of outreach activities across the regions, which included:
    - NSERC/Federated Co-operative Ltd. news conference announcing $2M in funding for a University of Saskatchewan based NSERC industrial research chair in soil remediation (April 2015)
    - Annual General Meeting of Co-operatives and Mutuals Canada (June 2015)
    - Federal Network on Co-operatives Meeting (June 2015)
    - Centre for the Study of Co-operatives Seminar on Rethinking the Economics of Co-operatives (September 2015)
    - Saskatchewan Co-operative Week Event (October 2015)
    - Co-operatives and Mutuals Canada Delegates Meeting (November 2015)
    - Annual General Meeting of Federated Co-operatives Limited (February 2016)
    - Federal, Provincial and Territorial teleconference calls with officials responsible for co-operatives (2015–16)
    - British Colombia Co-operatives Association Annual General Meeting
    - Senior management meetings with Co-operative Stakeholders (2015–16)

Implementation Strategy 1.1.11

Continue to support the growth of business services to manufacturing, including those which integrate innovation into product design and development and into the supply chain, and can result in environmental sustainability benefits.

Link to FSDS Goals and Targets

- **Theme I** Addressing Climate Change and Air Quality
    - **Goal 1** Climate Change: Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change
        - **Target 1.1** Climate Change Mitigation: Relative to 2005 emissions levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020

Link to ISED's PAA

- **Strategic Outcome 3:** Canadian businesses and communities are competitive
    - **Program:** Industrial Competitiveness and Capacity
        - **Sub-Program:** Industry-Specific Policy and Analysis

Description of the Implementation Strategy

ISED will continue to support the growth of business services to manufacturing, including those which integrate innovation into product design and development and into the supply chain, and can result in environmental sustainability benefits.

Relationship with FSDS Target(s)

The integration of environmental sustainability and eco-design early in the product development cycle enables manufacturers to reduce their environmental footprint, reduce waste and the use of materials and energy, extend product life, and facilitates re-use and recycling at the end-of-life stage for industrial as well as consumer products. Business services such as engineering, product development and design can contribute to manufacturing competitiveness as well achieving sustainable development objectives (e.g. through eco-design).These practices can help advance the FSDS goals of addressing climate change and air quality, water quality and quantity, and protecting nature by reducing overall impacts on the environment.

Non-Financial Performance Expectations

ISED planned outcomes include: decision makers have access to informed analysis on how business services such as design can help affect sustainable manufacturing practices; the role of professional services as enablers of manufacturing competitiveness is better understood; and manufacturers better understand the contribution of services such as engineering, design and eco-design in meeting corporate objectives.

Performance Measures

- Number of collaborative research or policy initiatives started or maintained on business services for the manufacturing industry
- Number of strategic outreach activities undertaken with a business services and sustainability, sustainable consumption and production dimension

Performance Results

The program was concluded in FY 2014-2015.

Implementation Strategy 1.1.21

Continue to collaborate with partners to enhance Canada's competitive advantage in hydrogen and fuel cells technology development and commercialization.

Link to FSDS Goals and Targets

- **Theme I** Addressing Climate Change and Air Quality
    - **Goal 1** Climate Change: Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change
        - **Target 1.1** Climate Change Mitigation: Relative to 2005 emissions levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020
    - **Goal 2** Air Pollution: Minimize the threats to air quality so that the air Canadians breathe is clean and supports healthy ecosystems
        - **Target 2.1** Air Pollutants: Reduce air pollutants in order to maintain or improve air quality across the country and achieve the emission targets

which are currently under development in consultations with provinces and stakeholders

Link to ISED's PAA

- **Strategic Outcome 2:** Advancements in science and technology, knowledge, and innovation strengthen the Canadian economy
    - **Program:** Science, Technology and Innovation Capacity
        - **Sub-Program:** Science and Technology Partnerships

Description of the Implementation Strategy

Canada is recognized internationally as a global leader in hydrogen and fuel cell research, development and early stage commercialization. The sector largely consists of small and medium-sized enterprises and research organizations supported by a well-educated labour force. The largest cluster of hydrogen and fuel cell companies in Canada is located in British Columbia (see the Canadian Hydrogen and Fuel Cell Sector Profile 2013).

ISED will identify potential issues and opportunities for global value chain engagement and hydrogen energy storage applications.

Relationship with FSDS Target(s)

Deployment of renewable energy technologies and use of hydrogen as an energy carrier will help increase the efficiency of energy systems thereby reducing environmental impacts.

Non-Financial Performance Expectations

ISED's planned outcomes include: decision makers have access to informed analysis on trends and issues affecting the competitiveness of Canadian industries.

Performance Measures:

- Collaborative research or policy initiatives started or maintained on hydrogen and fuel cell technology development and commercialization.

Performance Results

- ISED maintained a high level of outreach activities across the regions, which included stakeholder workshops on emerging technologies:

- A Hydrogen Energy Storage Workshop in partnership with Canadian Nuclear Laboratories (Chalk River, Sept 2015).

- International Hydrogen & Fuel Cells (HFC) Policy & Industry Development Forums on the margins of the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) meetings in Wuhan, China (May 2015) and Grenoble, France (Nov 2015), including HFC Education & Outreach workshops on the margins of the IPHE meetings in China and France.

- 1st Annual Clean Technology Expo and Championship (Surrey, September 2015).

- ISED continues to build sectoral analyses and environmental scans of emerging technologies to inform policy recommendations:

  - BC Clean Energy Vehicle Economic Opportunities Assessment – in partnership with the BC government, National Research Council of Canada (NRC), Natural Resources Canada, City of Surrey and the City of Vancouver.

  - Hydrogen & Fuel Cell Sector Profile 2015 (annual)

  - Development of a Techo-Economic Analysis Tool for potential Power to Gas deployments – done in partnership with the US Department of Energy, National Renewable Energy Laboratory, and NRC (a Canada/US Clean Energy Dialogue project).

Implementation Strategy 1.1.28

Continue to implement the Automotive Innovation Fund (AIF) through to 2018 in support of strategic, large-scale research and development projects leading to innovative, greener and more fuel-efficient vehicles.

Link to FSDS Goals and Targets

- **Theme I** Addressing Climate Change and Air Quality

  - **Goal 1** Climate Change Mitigation: Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change

        - **Target 1.1** Climate Change Mitigation: Relative to 2005 emissions levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020

Link to ISED's PAA

- **Strategic Outcome 2:** Advancements in science and technology, knowledge, and innovation strengthen the Canadian economy
    - **Program:** Industrial Research and Development Financing
        - **Sub-Program:** Automotive Innovation

Description of the Implementation Strategy

Budget 2008 introduced the AIF, providing $250 million over five years to automotive firms in support of strategic, large-scale projects in the automotive sector to support innovative, greener and more fuel-efficient vehicles. The renewal of the AIF was announced in January 2013, with an additional $250 million over the next five years to 2018. The Minister of Finance announced an additional $500 million for the AIF in Budget 2014 over two years (2014–15 and 2015–16).

ISED will work with the automotive sector to support the development and implementation of innovative, fuel-efficient technologies or processes. Activities supported under the AIF are associated with R&D initiatives such as the development of new products (e.g. advanced emissions technologies, energy-efficient engines and transmissions, advanced materials, and lightweight components and materials); advanced product testing that ensures cleaner, more efficient automotive performance, and reduced greenhouse gases; and new or expanded facilities to produce leading-edge and more energy efficient vehicles.

In 2015–16, ISED will continue to administer this program, which is one of the Department's main levers to encourage innovation in automotive R&D. Contribution agreements with automotive companies leverage investments in strategic, large-scale R&D projects to build innovative, greener, more fuel efficient vehicles.

The objectives of the AIF are:

- Build automotive research and development capacity in Canada and secure knowledge-based jobs;
- Enhance the government's science and technology (S&T) and environmental agendas;
- Support the development and/or implementation of innovative, fuel-efficient technologies or processes;

- Promote long-term economic benefit to Canada including significant job creation/retention; and

- Leverage private sector investments to foster Canadian competitiveness.

Each eligible project considered for funding is subject to a comprehensive due diligence process that may involve external experts who will examine the feasibility of the proposed eligible project. All proposals are assessed in the context of their relevance to the objectives of the AIF and must provide environmental, technological, and economic benefits to Canada.

Eligible activities supported under the AIF are those typically associated with major automotive innovation and R&D initiatives to develop and build greener, more fuel-efficient vehicles, including:

- New product development (e.g., advanced emissions technologies, energy-efficient engines and transmissions, advanced materials, including engineered plastics, and lightweight components and materials);

- Leading-edge engineering and design, and prototype development;

- Advanced product testing that ensures cleaner, more efficient automotive performance, and reduced greenhouse gases;

- Development of new production methods and process technologies, including advanced flexible manufacturing techniques;

- New or expanded facilities to produce leading-edge and more energy efficient vehicles and powertrains;

- Substantive investments in new flexible manufacturing processes; and

- Introduction of other new transformative production technologies to substantially increase productivity and efficiency (e.g. robotics and advanced IT systems).

Relationship with FSDS Target(s)

The continued implementation of the AIF program should result in innovative, greener and more fuel-efficient vehicles, and more eco-efficient and sustainable manufacturing facilities and processes that will help reduce GHG emissions and air pollution, thus helping to achieve the environmental goal of the FSDS Theme 1—addressing climate change and air quality.

Non-Financial Performance Expectations

ISED's planned outcomes include the signature of at least one contribution agreement with an automotive company towards an investment in strategic, large-scale R&D projects to build innovative, greener, more fuel—efficient vehicles. Once successfully completed, it is anticipated that the project will result in innovative, greener, and more fuel-efficient vehicles and/or powertrains assembled in Canada, and/or more innovative, fuel-efficient technologies or processes being implemented in the automotive sector. Projects should also increase the automotive R&D capacity in Canada and thus secure knowledge-based jobs in that sector. The AIF will also continue to be a key lever in encouraging investments in automotive innovation in Canada.

Performance Measures:

- Number of projects to date focusing on innovative fuel-efficient technologies and processes
- Dollars to date of investment leveraged per dollar of ISED disbursements in automotive R&D projects

Performance Results

- An agreement was signed in 2015–16, bringing the total number of agreements focusing on innovative fuel-efficient technologies and processes to 8.
- To date, $7.08 of investment was leveraged per dollar of federal disbursements for AIF related projects.
- The AIF has also contributed to reduced GHG emissions by encouraging new product development in advanced emissions technologies, energy-efficient engines and transmissions, advanced materials, including engineered plastics, and lightweight components and materials. The program has led to the automotive industry further developing innovative and greener production methods and process technologies, which have resulted in reduced emissions in manufacturing facilities.

Implementation Strategy 4.3.8

Provide scientific expertise, guidance and advice to decision makers, and develop and apply models for social, cultural and economic valuation of ecosystem services to support sustainable development decision making so that ecosystem information and environmental effects of development proposals can be factored into decisions.

Link to FSDS Goals and Targets

- **Theme 3** Protecting Nature and Canadians
    - **Goal 4** Targets to conserve and restore ecosystems, wildlife and habitat
        - **Target 4.3** Terrestrial Ecosystems and Habitat Stewardship

Link to ISED's PAA

- **Program:** Internal Services

Description of the Implementation Strategy

Ecosystem services, which include the process of plants releasing oxygen to the atmosphere while absorbing carbon dioxide, biotic material filtering drinking water, and the process of pollination by insects and birds that allow new plants to grow, have socio-economic value. Increased understanding by government and business of the value of ecosystem services in the economy can increase the understanding of the environmental effects of economic development proposals and this knowledge can be factored into decision making. Over the next year, ISED will work with Environment Canada, Statistics Canada and academics to link data on plant and firm activity (through the annual survey of manufacturers) to data for environmental outcomes (e.g. carbon emissions).

Relationship with FSDS Target(s)

As the understanding of the socio-economic value of ecosystem services increases, it is likely that decision makers will take decisions that increasingly take into consideration the value of ecosystem services. This will help conserve and restore those ecosystems, thus protecting nature.

Non-Financial Performance Expectations

ISED's planned outcomes include improved understanding by decision makers in the public and private sectors of the value of ecosystem services, and integration of the value of ecosystem services into decision making.

Performance Measures

- Number of times that the value of ecosystem services is integrated into decision-making

Performance Results

- The project was concluded in FY 2014-2015.

Implementation Strategy 4.3.9

Support research efforts to develop and apply models for economic valuation of natural capital to improve the understanding of natural capital productivity and productivity in general in Canada and to support sustainable development decision-making.

Link to FSDS Goals and Targets

- **Theme 3** Protecting Nature and Canadians
    - **Goal 4** Targets to conserve and restore ecosystems, wildlife and habitat
        - **Target 4.3** Terrestrial Ecosystems and Habitat Stewardship

Link to ISED's PAA

- **Program:** Internal Services

Description of Implementation Strategy

Canada's economy relies on natural capital. Natural capital includes nature's renewable and non-renewable assets that produce socio-economic value such as minerals, energy resources, water resources, plants and animals, and biotic ecosystems. Like all assets, nature's assets should be understood, measured and managed. Measuring the value of natural capital helps to identify those resources which are being used optimally and allows informed decision-making about economic development. Using natural resources more efficiently and increasing their productivity is crucial to Canada's sustainable economic growth.

ISED has formally pledged support for a Social Sciences and Humanities Research Council partnership development grant research project on natural capital and productivity, which is being led by Sustainable Prosperity, a think-tank based at the University of Ottawa. In the next year, ISED will work with Sustainable Prosperity to support the development and implementation of a research plan.

Relationship with FSDS Target(s)

Supporting research on the economic valuation of natural capital may help protect nature by increasing the understanding of its importance to sustainable economic development. Understanding the value of Canada's renewable and non-renewable natural assets may lead to more sustainable consumption and production strategies by industry as resources are used more efficiently and less waste is produced.

Non-Financial Performance Expectations

ISED's planned outcomes include: improved measurement and management of Canada's natural assets; the integration of concepts related to the valuation of natural capital and natural capital productivity into public and private sector decision-making; the integration of natural capital considerations into national accounts; and, improved productivity outcomes for Canada as these concepts are integrated into productivity data and measures.

Performance Measures

- ISED's contribution to the development and implementation of the research plan

Performance Results

- ISED provided economic expertise and knowledge on productivity and environmental capital, and facilitated access concerning firm-level data at Statistics Canada, toward the development of a research plan, and its implementation in 2015.

Implementation Strategy 4.7.4

In accordance with mandated responsibilities, provide environmental and/or other information to reduce the risk of, and advice in response to, the occurrence of events such as polluting incidents, wildlife disease events or severe weather and other significant hydro-meteorological events as applicable.

Link to FSDS Goals and Targets

- **Theme 3** Protecting Nature and Canadians

- **Goal 4** Targets to conserve and restore ecosystems, wildlife and habitat, and targets to protect Canadians
    - **Target 4.7** Environmental Disasters, Incidents and Emergencies

Link to ISED's PAA

- **Strategic Outcome 1:** The Canadian marketplace is efficient and competitive
    - **Program:** Spectrum, Telecommunications and the Online Economy
        - **Sub-Program:** Spectrum Management and Telecommunications

Description of the Implementation Strategy

Under the Federal Emergency Response Plan (FERP), ISED is responsible for:

- Facilitating the restoration and maintenance of telecommunications services during an emergency situation by providing situational awareness and federal representation of the telecommunications stakeholders' interests in efforts such as fuel prioritization, credentialing, public communications, international assistance, and the movement of resources; and

- Working with the telecommunications sector to ensure the telecommunications needs of first responders are met and to enhance the repair and restoration of affected networks. In times of emergency, the short term capability to facilitate the rapid repair, replacement and expansion of telecommunications systems is ISED's highest priority.

Relationship with FSDS Target(s)

By providing situational awareness and assistance to telecommunications companies in their efforts to maintain or restore Canada's telecommunications services in an environmental emergency or disaster, ISED contributes to the protection of the health and safety of Canadians and that of the community in general, thus helping to achieve FSDS Theme 3 – Protecting Nature and Canadians.

Non-Financial Performance Expectations

In order to be well prepared to respond to an environmental emergency, ISED will keep its networks up-to-date, and keep its emergency response plans up-to-date and review them regularly. As a result, Canadians are protected from effects of natural disasters as it relates to the maintenance of emergency telecommunications services.

Performance Measure

- Up- to-date emergency response plans

Performance Results

- ISED updated its emergency response plan. The plan was finalized in fall 2015.

Implementation Strategy 4.8.4

Continue to co-operate with partners across Canada to implement the Computers for Schools program to divert electronic equipment from landfills thus protecting nature, preventing water pollution and providing economic and social benefits to Canadians.

Link to FSDS Goals and Targets

- **Theme 3** Protecting Nature and Canadians
    - **Goal 4** Targets to conserve and restore ecosystems, wildlife and habitat, and targets to protect Canadians
        - **Target 4.8** Chemicals Management

Link to ISED's PAA

- **Strategic Outcome 3:** Canadian businesses and communities are competitive
    - **Program:** Community Economic Development
        - **Sub-Program:** Computers for Schools

Description of the Implementation Strategy

ISED's Computers for Schools Program advances environmental sustainability by refurbishing computers and related equipment donated by the public and private sectors. The refurbished computers are distributed across Canada to schools, libraries, registered not-for-profit learning organizations, and Aboriginal communities.

By maximizing the utilization of electronic resources, the Computers for Schools Program not only has a positive impact on the environment but provides the opportunity for youth to gain

skills and experience in the field of information and communications technology. The re-use of equipment positively impacts the future generation of workers and students by exposing them to technologies and preparing them to be successful in the knowledge-based economy.

Over the next year, ISED will:

- Continue to manage the Computers for Schools Program to maximize use of electronic resources;
- Require recipients to provide details on their recycling protocols; and
- Report on the amount of e-waste material managed in 2014 –2015.

The Computers for Schools program (CFS) is also part of Digital Canada 150, Canada's digital economy strategy, which represents a comprehensive approach to ensuring Canada can take full advantage of the opportunities of the digital age. It also envisions Canadians armed with the skills and opportunities necessary to succeed in an interconnected global economy. Digital Canada 150 is built on five pillars: Connecting Canadians; Protecting Canadians; Economic Opportunities; Digital Government; and Canadian Content. The CFS program is one of the key components of the Economic Opportunities pillar and provides students and interns with access to digital equipment and skills training.

Relationship with FSDS Target(s)

Through the use of accredited recycling programs, ISED is diverting electronic waste from land fill sites, and making a positive contribution to the *Federal Sustainable Development Strategy* goals of protecting air, water and nature. Electronic waste contains many chemicals and metals which are toxic to the environment. If this waste is disposed in landfill sites, there is a high risk of seepage into the ground water and the soil, which could affect wildlife and their habitat. Refurbishment activities through the Computers for Schools Program have considerable environmental benefits, such as positive impact on energy used, greenhouse gas reduction, solid and hazardous waste reduction, reduced air and water emissions, and reduction of the environmental footprint. Proper management of chemical substances is essential for protecting the health of Canadians and the environment, as well as reducing future costs associated with water treatment, clean-up of contaminated sites, and treatment of illnesses related to chemical exposure.

Non-Financial Performance Expectations

ISED will report statistical information on the amount of electronic waste diverted from landfill and sent to recycling for each of its funding recipients. ISED will also report on the number of refurbished computer units delivered annually to partner organizations. The expected result is schools, libraries, not-for-profit learning organizations and Aboriginal communities will receive refurbished computers.

Performance Measures

- The amount of electronic waste sent to recycling for each of its funding recipients
- The number of computer equipment donations and refurbished computer units delivered annually to partner organizations

Performance Results

- In FY 2015-2016, the program resulted in re-using 63,104 computers and other peripherals, which diverted 614 tons of computer equipment from recycling facilities and landfills in the north.
- Since its inception in 1993, the CFS program has made a significant and positive impact on the environment. To date, approximately 1.4 million computers have been refurbished and distributed throughout Canada and approximately 42,000 tons of e-waste has been diverted under the program. The program has also contributed to the continued development of provincial producer responsibility programs for e-waste recycling. Recycling programs for e-waste have been developed in all provinces with the exception of New Brunswick. As of October 2015, New Brunswick established an electronics waste management program under the Clean Environment Act and is working with industry to develop the program.

4. Theme IV: Implementation Strategies

ISED contributes to Theme IV: Shrinking the Environmental Footprint: Beginning with Government. Specifically, the Department contributes to:

- Green procurement targets (including targets related to training, performance evaluations, and management processes and controls);
- Recycling all surplus electronic and electrical equipment in an environmentally sound manner;
- Reducing internal paper consumption per employee by 20 percent from 2006–07 levels;
- Achieving an 8:1 ratio of employees to printing units;
- Adopting a guide for greening meetings and events;

- Reducing greenhouse gas emissions from fleet vehicles by 17 percent from 2005–06 levels by 2020; and,

- Achieving a high environmental performance of buildings.

Details on ISED's progress in meeting the targets towards Greening Government Operations are provided through the supplementary information tables itemized in the Departmental Performance Report.