The SDTC Corporate Plan has been created by the Government of Canada and was published in October 2012. Figures in this document are current as of June 30, 2012, unless otherwise stated. SD Tech Fund™, NextGen Biofuels Fund™ and SD Business Case™ are trademarks of SDTC. The SDTC Corporate Plan—Executive Summary is available online at www.sdtc.ca. Hard copies of the SDTC Corporate Plan may be obtained on request.

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Sustainable Development Technology Canada (SDTC) was established by the Government of Canada to serve as the primary catalyst building a sustainable development technology infrastructure in Canada. From an initial investment of just under $5 million in 2002, SDTC’s portfolio has grown to 238 projects across Canada with a total leveraged project value of $2 billion, 82% of which comes from the private sector.
SDTC projects provide technology solutions for major economic sectors in Canada by helping commercialize technology solutions thereby deliver economic, environmental and health benefits to Canadians in every province of the country. The following sections will discuss the variety of ways in which SDTC provides value to Canada.

**Agriculture & Forestry**
SDTC Snapshot: Agrisoma has produced a biojet fuel in partnership with Honeywell from a non-food, industrial oilseed grown in Saskatchewan.

**Mining & Oil and Gas**
SDTC Snapshot: Titanium’s oil sands technology reduces water use by approximately 25% and recovers heavy minerals, valued at over $400 million per year.

**Manufacturing**
SDTC Snapshot: Tenova Goodfellow’s monitoring systems are in use in steel mills in Canada, the US and Italy, reducing production times and total energy use.

**Utilities**
SDTC Snapshot: Tantalus Systems Corp.’s smart grid technologies are giving consumers a real-time measure of their power consumption and allowing utilities to manage operations more efficiently, leading to power reductions of up to 20%.

**Construction Industries**
SDTC Snapshot: New Condo towers in the Toronto area are being built with dPoint’s technology, bringing a 65% increase in heating and cooling efficiency.

SDTC-supported technologies also contribute to the competitiveness of services-producing industries—the other major subset of Canada’s GDP. SDTC’s portfolio value in these industries is $502 M, primarily in transportation and waste management.
1 SDTC Strengthens and Diversifies Canada’s Economy

Through SDTC’s investment in emerging technologies, the Government of Canada is building a stronger, more competitive and diverse economy. SDTC’s portfolio of 238 projects includes 106 technology types, providing improved performance and productivity for Canadian industry. SDTC supports regional economies, strengthening companies across the entire country. This builds on provincial strengths and creates opportunity and investment.

SDTC is strengthening the economy by supporting technologies that will create new employment in emerging businesses and upgrade competitiveness of traditional industries. Investment in these technologies has the potential to create more and higher paying jobs than other policy options—up to four times as many jobs per dollar than tax cuts, according to the United Nations Environment Programme (UNEP) Sustainable Energy Finance (SEF) initiative.¹

Recognizing this, in June 2011, the Government of Canada announced a new allocation of $40 million to enable SDTC to continue its work that “supports the creation of high-value jobs.”²

In 2011, the number of cleantech³ jobs in Canada topped 44,000. These are highly skilled, high quality jobs that offer median wages 13% higher than the average.⁴ Further, job multipliers for the clean technology industry exceed 8.7 direct and indirect jobs per initial $1M demand. This is higher than the traditional and well-established industries in Canada, as can be seen in the following figure.

While the Canadian job creation potential from cleantech as an industry is impressive, SDTC-supported cleantech firms do even better. From 2008 to 2010, SDTC-funded companies enjoyed employment growth of 10 percent compared to 7 percent of non-SDTC cleantech companies.³ Global economic uncertainty remains and as an export dependent country, Canada is adversely affected. Diligence in pursuit of growth areas is critical. An important contributor is the cleantech/clean energy sector which saw a year-over-year growth in revenue of 18% in 2012.

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³ Cleantech is a very broad, heterogeneous grouping of technologies that includes energy and water technologies which increase efficiency and performance in important markets—such as oil and gas, mining, forestry, agriculture, power generation, waste management and for industrial/commercial/domestic end uses. Further, as these technologies deliver environmental as well as economic benefits, they play an important role in the health of all Canadians.

⁴ Brookings Institute (2011) Sizing the Clean Economy: a national and regional green jobs assessment  

⁵ Analytica Advisors
2 SDTC Adds Value to Canada’s Natural Resources

In 2010 alone, Canada’s natural resource sectors—including forestry, mining, and oil and gas—generated 11.5 percent, or $143 billion, of Canada’s gross domestic product (GDP) and directly employed close to 763,000 people. Investment in a sustainable development technology infrastructure will ensure that Canada’s natural resource sectors will remain vibrant, innovative, environmentally sensitive, and competitive. To support that objective, SDTC’s natural resources portfolio includes 191 projects worth $501 million of project investments for a total project value of $1.9 billion.

Figure 3 - Total SDTC and Leveraged funding by Province

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Clean Energy - SDTC technologies are helping to address key environmental issues associated with fossil fuel extraction, production and distribution. Approximately 80 percent of SDTC's portfolio touches on clean energy production, power generation, transportation and/or energy utilization/efficiency. Twenty-two percent of SDTC funds are allocated to technologies that support the extraction and production of cleaner fossil fuels. This includes processes that use solvents instead of steam to draw heavy oil from reserves are significantly reducing water and energy consumption.

The remaining 20 percent of SDTC's portfolio are related to sustainable use of water and land, which are essential to socially acceptable production and use of energy.

SDTC-funded companies work with Go-to-Market consortia that include technology end-users. As such, SDTC has projects with many of the major players in the oil and gas industry. Innovative SDTC-supported technologies are enabling companies to reduce greenhouse gas and particulate emissions, clean up tailing ponds, and reduce water usage. SDTC has partnered with key organizations including CAPP, OSLI, CCEMC, COSIA, PTRC, PTAC, and Alberta Innovates to further the diffusion of these important technologies. This will support access to key markets for SDTC-supported companies, maintaining and creating employment in this vital industry.

Forestry - The Government, through SDTC, has invested $34 million into 12 projects related to forestry practices, with a total leveraged value under management of $115 million. With SDTC's help, Canadian companies are developing technologies to seize upon the waste-to-energy and waste-to-value opportunities in the forestry sector. These innovations allow forestry operations to generate their own clean heat and power from the waste they produce and enable new revenue streams by converting waste into in-demand products such as chemicals, solvents and consumer goods such as next-generation biofuels.

SDTC was an early contributor to the BioPathways study developed with the Forest Products Association of Canada and has championed biorefineries since first identified in the 2004. SDTC has partnered with leading organizations, such as Canadian Renewable Fuels Association, BioteCanada, Canada Wood Council, and Forest Products Association of Canada to further the commercial uptake of SDTC-supported technologies by key market adopters.

Mining – The mining sector contributed $36 billion and 308,000 jobs to the Canadian economy in 2010.7 Canada's mining industry plans to invest a further $139 billion in new projects nationwide over the next decade, making it one of the key engines of growth.8 SDTC has invested demonstration projects for technologies that will improve the efficiency of extraction while protecting workers' lives and concomitantly reducing environmental impacts, and is now seeing a significant increase in Green Mining applications.

3 **SDTC Mobilizes Private Capital and Leverages Public Monies Extensively**

To make the most out of its public funding, SDTC engages the private sector to form Go-to-Market consortia. This consortium approach has two strategic advantages. First, it reduces the risk to public money by ensuring relevance to customers and the marketplace. Second, it increases the probability of commercialization of the technology by bringing private sector investors into the equation at a very early stage and engaging the necessary end users and customers to participate in real world applications that meet customer demand.

SDTC optimizes the value of its funding by leveraging private sector investment in two critical ways. Initially, SDTC does so through obtaining non-Federal Government money into the project consortium at a level of about one Federal dollar to 3 non-Federal dollars. Of the $2.1 billion in total eligible project value (as of June 30, 2012), $581 million, or 27 percent, was contributed by the Government through SDTC and $1.6 billion was leveraged from project consortia members (81 percent of which comes from the private sector).

The second and more significant leverage comes from SDTC’s unique relationships with the private sector investment industry in Canada and internationally. Through SDTC’s introductions to downstream investors of all classes, 52 of the more mature SDTC projects (ones that are not completed yet are readying for market) have attracted $2.3 B in Follow-on Financing. Therefore, Government funds of $158 million (representing SDTC’s project contribution) have been leveraged 14 times, which is an unprecedented level across the Federal Government. As the portfolio matures and more projects achieve completion, this leveraged amount will increase significantly.

### Figure 4 - SDTC Portfolio Funding Breakdown

<table>
<thead>
<tr>
<th>Total Eligible Project Costs</th>
<th>$ 2.13 B</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDTC Contribution</td>
<td>$ 581 M (27%)</td>
</tr>
<tr>
<td>Leverage Funding</td>
<td>$ 1.55 B (73%)</td>
</tr>
<tr>
<td>Industry Leveraged Funding</td>
<td>$ 1.26 B (81%)</td>
</tr>
<tr>
<td>Other Funding*</td>
<td>$ 294 M (19%)</td>
</tr>
</tbody>
</table>

*Includes funds from federal departments, provincial governments and academia.
All figures as of June 2012

As a result of SDTC’s private sector savvy and connectivity, the SDTC portfolio of projects represents the largest cleantech portfolio of its kind in the world. SDTC and its partners invest 1.5 times all other cleantech venture capital investment in Canada. In short, SDTC is the “Market Maker” for Canadian cleantech.
Once in the market, SDTC companies take several paths to later stage funding to support the commercialization of their technologies. Just under twenty percent of the Canadian cleantech companies listed on the TSX have received funding from SDTC. Further, 46 companies, into which SDTC invested $100 million, have already accumulated revenues exceeding $212 million prior to 2011, with an additional estimated $190 million in 2011 alone. Also in 2011, EcoSynthetix, an SDTC-supported company, posted the single largest cleantech IPO in Canada last year at $100 million and was in the top 5 largest IPO’s in all market categories.

4 SDTC Builds Economically Sustainable Businesses

Small and medium-sized enterprises (SMEs) — businesses with fewer than 500 employees – drive job creation in Canada. They employ 60 percent of the country’s workforce, account for 45 percent of Canada’s GDP and are responsible for 75 percent of net job growth.\(^9\)

Because they are relatively small and mobile and operate in highly competitive markets, SMEs are a strong source of innovation in Canada. However, SMEs lack the resources, experience and expertise to bring their innovation to market. SDTC works closely with SMEs, helping them to successfully bridge the commercialization gap.

SDTC’s primary function is to provide funding for development and demonstration projects where private sector investors are not willing to do so due to the level of risk. SDTC takes on and manages these technology and company development risks. To date, SDTC has processed funding requests in excess of $4.5 billion from over 2,200 applications, incorporating over 7,000 entities. From these applications, SDTC has committed funding to 238 projects. SDTC is the “Funder of First Resort” helping applicants to be better able to obtain financing from other sources, creating a positive catalyzing effect.

SDTC’s support for small and medium-sized businesses goes beyond funding. Through its due diligence and business development support, SDTC strengthens the SME’s management capacity and value proposition. In later stages of the project, SDTC with its extensive industry and finance network, links SMEs with Canadian and international follow-on investors, and provides introductions to customers and channels partners.

Proof that SDTC’s role produces superior performance is that compound annual growth in revenues for SDTC companies is almost twice that of non-SDTC cleantech companies. In short, SDTC companies outperform the market.

5 SDTC Enables Canada to Seize its Share of the $4 Trillion Global Cleantech Market Opportunity

The global cleantech/clean energy market is estimated to be worth $4 trillion.\(^10\) To ensure that Canadian innovators are tapped into this large and growing market, SDTC contributes to the Department of Foreign Affairs and International Trade’s (DFAIT) Cleantech Strategy, works with organizations such as the Export Development Corporation (EDC), and creates opportunities for SDTC companies to attract investment from international sources through its TSX-SDTC Investor Days and the SDTC Venture Summit.

With SDTC portfolio companies maturing, they are better able to tackle export markets. Consequently, SDTC and EDC have a strategic relationship that sees the partnership assess risk and then support portfolio companies with a menu of risk mitigation instruments to improve access to markets and sales.

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An analysis of SDTC-supported technologies, based on the foundational work on global cost curves by SDTC and McKinsey and Company conducted in 2010, demonstrated that Canada has a significant international market advantage. SDTC’s unique and proprietary database of technology benefits, market uptake statistics, and competitive analysis combined with McKinsey and Company’s data, is the platform upon which these analyses are based. In fact, SDTC’s portfolio has solutions to address 72% of the global market space for sustainable technologies at costs that are expected to meet, or be significantly lower than, those of competing alternatives. Therefore, SDTC’s portfolio companies have the potential to make a significant contribution to Canada’s export revenues. Further, the use of the SDTC platform is a key tool designed to help Canada determine where it should focus efforts. SDTC continues to work in collaboration with its colleagues in Government to leverage this resource. SDTC’s support of its portfolio companies’ go to market activities is focused on leveraging relationships within deep and relevant markets to help accelerate the companies’ market entry and growth. For example, from a follow-on financing perspective, SDTC portfolio companies have excelled at attracting investment from large pools of capital in international markets and from corporate investors for whom SDTC’s funded technologies are of particular strategic importance. As of Q2 2012, 57% of all follow-on financing raised by SDTC companies came from investors outside Canada, while these investors’ share has almost doubled over the last three years. SDTC has seen the amount of financing raised from corporate / strategic investors also rise, accounting for just under 50% of all follow-on financing in 2011. There are further encouraging signs of new capital formation to take advantage of these trends. SAIL Capital out of California and T-Stone from South Korea via RCI Capital have announced new venture capital funds totalling over $400 million targeted at Canadian cleantech investments, in particular those supported by SDTC.

In addition, SDTC is often requested to attest to the Canadian cleantech capacity at key conferences that attract an international audience. SDTC plays a key role in the Government of Canada’s international activities, such as leading the clean water initiative in the Canada-Israel Science partnership, strengthening Canada-UAE relations through collaboration on a joint business council, and supporting Canada’s sustainability position at Rio+20.

“Countries like China are making major investments in clean technology and we have to keep pace. Developing new technology is a high risk game — and that can make investors nervous. SDTC helps offset much of the risk, which in turn encourages investment.”

Jayson Myers, President & CEO, Canadian Manufacturers & Exporters

“Having an organization like SDTC focus on helping commercialize Canadian clean technology solutions is critical to Canada’s global competitiveness and leadership in clean technology.”

John Saabas, President, Pratt and Whitney Canada
6 SDTC Commercializes Innovation

It is not until the innovative clean technologies are deployed in the market that the majority of their economic and environmental benefits can be realized. SDTC provides crucial support to portfolio companies to help them commercialize their innovative technologies, including pre-project guidance and feedback for all applicants. SDTC works with technology developers to build their value proposition and develop solid business plans.

In the project delivery phase, the Foundation links project companies with consortia partners who provide project funding. As the projects progress, SDTC helps link technologies to financing and customers through programs such as the Follow-on Financing and the Technology Adoption Partnership initiatives via SDTC's unique network of business relationships.

SDTC’s understanding of how innovation is adopted by the market enables its portfolio companies to outperform the market. Of the 63 completed projects (as of June 30, 2012), 56% percent have been adopted into the market, and 21 others, or 33 percent, are in advanced stages of commercialization. To date, SDTC has shepherded 35 technologies to market—either to the point of commercialization or fully into the market. This is well above the venture capital standard of 20 percent, even though SDTC operates at an earlier stage in the innovation process, taking on higher levels of risk than the majority of the venture industry.

7 SDTC is a Key Player in Establishing Canada as a Significant Force in NextGen Biofuels

The NextGen Biofuels Fund™ (NGBF), created in September 2007, is aimed at supporting the establishment of first-of-kind large demonstration-scale facilities for the production of next-generation renewable fuels and co-products in Canada. The NGBF is intended to encourage the development of technology expertise and innovation capacity for production of renewable fuels from non-food biomass sources in Canada. In doing so, SDTC will provide advanced, value-added technologies that represent the future for the forestry, wood, and wood products industries, while in the agricultural sector these products and processes will both diversify agricultural revenues, reducing income volatility from commodity prices, and increase profits by turning agricultural waste into new revenue streams.

The NGBF leverages Canada's vast forestry and agricultural waste stocks, established supply chains, and leading edge technologies, positioning Canada to be a leading producer of next-gen biofuels and related technologies. This unique funding instrument has attracted interest from around the world. Over the past year, the NGBF has engaged over 200 companies, encouraged the best, and now has approved three Applications for Funding (AFF), with two additional AFFs in the approval process. NGBF is also reviewing 3 Indications of Interest (IoI) with several high potential projects in the pipeline for first-of-kind next-generation biofuels plants in Canada. SDTC's Board decisions have led to a possible commitment for 60% of the fund.

SDTC has strengthened Canadian capacity for NGBF through its work in the SD Tech Fund by supporting pre-commercial demonstrations of next-generation biofuels technologies. These are potential candidates for NGBF funding when they complete their projects and are ready to be scaled up for commercial production. Since traditional financing sources typically avoid first-of-kind demonstrations at any scale, SDTC bridges the financial and market gaps providing a complete array of demonstration funding in the next-generation biofuels market space, from pilot to commercial.

8 SDTC is Cost Effective and Vigorously Protects Canada’s Investment

Through its excellence in governance, strong leadership and good management, SDTC has demonstrated that it is a trustworthy and responsible guardian and steward of public funds. SDTC has undergone extensive audits and evaluations that consistently affirm and reaffirm that Canada is getting optimal value for its investment in SDTC.
A value-for-money audit conducted by Natural Resources Canada and completed in 2011 concluded that “SDTC has implemented and follows practices and processes to achieve each of the audit objectives.” The audit examined Strategic Decisions, Approval and Monitoring of Projects, Performance Measurement and Reporting, and Human Resources Management Practices. It acknowledged SDTC’s proactive approach to identifying potential and emerging issues and dealing with them effectively, including seeking assistance from the federal government where appropriate. The audit attested to SDTC’s efficiency and effectiveness and found that SDTC’s operating expenses were reasonable and consistent with the objectives of the fund.

Since the audit, SDTC’s Board responded to the Government’s Deficit Reduction Action Plan by reducing the future lifecycle budget by 13%.

An independent evaluation of SDTC’s cost-benefit analysis was undertaken as part of the second interim evaluation in 2009 and was updated in 2011. The 2009 evaluation found that SDTC delivered an unprecedented nine times return on investment through economic and social benefits.11 The most recent analysis examined 78 SDTC-supported companies, into which SDTC invested $124 million, and determined the net present value of total benefits assessed to be over $3.2 billion. This represents a 26 times net present value over the original investment of public funds by SDTC.

The October 2011 report *Innovation Canada: a Call to Action* by the Review of Federal Support to Research and Development – Expert Panel Report supported SDTC’s model and recommended it be applied even more broadly within Government.12

9 **SDTC Strengthens Canada’s Reputation Abroad**

The Government of Canada’s investment in SDTC demonstrates its commitment to innovation, efficiency and the environment for stakeholders around the world. This was highlighted by the inclusion of SDTC as a case study in a 2011 OECD report, *Studies on Environmental Innovation: Better Policies to Support Eco-Innovation*. The report held SDTC up as a role model for enabling public-private partnerships (PPPs) to promote eco-innovation—lending further international recognition of Canada’s leadership in developing and sustaining the Foundation.13

SDTC’s investment in technologies that lead to cleaner extraction, processing and utilization of fossil fuels address issues that create reputational risk in key export markets. This will support access to key markets, maintaining and creating employment in this vital industry.

International investors have given their stamp of approval to SDTC’s processes. Of $2.3 billion of follow-on financing raised to date, 57 percent has come from sources outside Canada. SDTC continues to be engaged by the international community on the strength of its portfolio. For example, SDTC recently formalized an arrangement with Veolia Environnement of France to accelerate the commercialization and market uptake of innovative Canadian clean technologies.

10 **SDTC Informs and Enables Regulation**

SDTC has supported technologies that enable regulated entities to meet their compliance obligations. This includes the reduction of greenhouse gas and particulate emissions, the remediation of oil and gas sites, meeting clean water standards, and addressing waste management requirements. Two-thirds of the projects funded by SDTC help companies meet regulatory compliance obligations.

The environmental performance facilitated by SDTC technologies allows governments to set new policy and to establish effective performance standards with the knowledge that technologies exist that can meet those standards. Through the SD Business Case™—a proprietary business decision-making tool developed by SDTC—and stakeholder consultations, which bring together technology developers, industry, policy makers and government agencies into a dialogue, SDTC informs the development of appropriate policy and investment priorities.

Clean technology is an increasingly important economic sector; however, it is still in the early stages and is subject to many drivers, including political, social, economic and technological influences. The successful development, demonstration and adoption of clean technologies is subject to numerous external factors, such as current and emerging regulatory requirements, business conditions (such as economic outlook, and energy pricing), and the competitive landscape.

In order to best serve its stakeholders and fulfill its mandate, SDTC must always operate in the present but with a vision of the future. This vision is informed by monitoring and understanding these key external factors. This includes identifying risks that may affect SDTC’s ability to fulfill its mandate, by recognizing new opportunities and adapting as the cleantech landscape changes. This section will discuss SDTC’s current vision for the future.

**SDTC Recapitalization is Critical to Government’s Agenda**

In 2011, SDTC celebrated its ten year anniversary. The $590 million SD Tech Fund will be fully allocated in 2012. As has been outlined in this report, SDTC has enjoyed considerable success over the past ten years. While the funders, Board of Directors, Senior Management and staff have much to be proud of, there remains much work to be done. Without a renewed promise of financial support from the Government of Canada, SDTC will be unable to maintain the momentum it has established over the previous ten years and maximize results to Canadians.

It is SDTC’s position, and with a considerable amount of third-party objective data on the quality and reality of SDTC’s results, that it is the best instrument to ensure future success. SDTC is a unique private sector oriented entity, which responds rapidly and flexibly to the Government’s agenda and delivers measurable results in the following key ways:

- SDTC’s clean energy companies support Canada’s energy export diversification agenda;
- SDTC’s companies are export-oriented, thereby increasing Canada’s export revenues and stimulating the Canadian economy;
- SDTC’s portfolio adds value to Canada’s natural resources strengthening productivity and competitiveness, thereby increasing profitability and reducing environmental footprint;
- SDTC’s processes and culture are recognized as contributing strongly to Canada’s Innovation Agenda; and
- SDTC has built momentum which, if left unsupported, would adversely impact Canada’s competitive position globally as other countries are stepping up their commitments in this area.

Global demand for cleantech, which encompasses clean energy, is growing rapidly and many countries seek to gain share of this significant market opportunity. SDTC has laid the Canadian foundation to be competitive in many arenas (cleantech is a highly heterogeneous category targeting broad markets ranging from fossil fuels, to mining, forestry, agriculture, transportation, buildings, construction & infrastructure, and community-based solutions for the North). For Canada to proceed in improving the productivity of its economy and capturing its share of exports, we must maintain and build momentum based on the SDTC platform.
Further, uncertainty around SDTC’s long-term viability will result in reduced investment in and uptake of SDTC-funded technologies. Without the SDTC team around to broker the deals with other investors and multi-national corporations, portfolio companies will be left to struggle through this difficult part of the innovation ecosystem. This will negatively impact further success of SDTC portfolio companies, and will severely limit Canada’s ability to compete in the $4 trillion global cleantech market. Many countries (especially in Asia, Europe, and the United States) are making significant investments in cleantech innovation. Currently Canada is in danger of falling behind in this increasingly important and competitive sector. According to a 2011 report by the Cleantech Network, the U.S. is rapidly outstripping Canada in cleantech investment (see Figure 5 below). Insufficient cleantech funding will adversely affect the ability of key economic sectors to adapt to the realities of a global marketplace in which efficiency and sustainability are crucial for long-term viability.

The Government of Canada has identified innovation as a key for improving Canadian productivity and competitiveness. The October 2011 report Innovation Canada: a Call to Action by the Review of Federal Support to Research and Development recognized the importance of the SDTC model in promoting the successful commercialization of Canadian innovation, stating that that “The commercialization model developed by Sustainable Technology Development Canada might be emulated.”

Reinforcing this notion, in 2011, the Canada West Foundation published a report that stated “If [Canada] is to position itself successfully for a low-carbon transition, it needs to foster the commercialization of its energy innovations.”14 One way to do this, the report concluded is through the “continued (and expanded) funding of Sustainable Development Technology Canada (SDTC), which makes targeted investments in innovations with a specific emphasis on making them commercial.”15

By granting recapitalization to SDTC, the Government of Canada has an opportunity to demonstrate its continued commitment to building a viable, competitive cleantech and clean energy industry in Canada, allowing Canada to remain competitive in the burgeoning, and increasingly important, global cleantech market.

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Evolving the SDTC Model

As a not-for-profit foundation funded by the Government and operating in partnership with stakeholders in numerous sectors, SDTC’s continued success is affected by many factors that are external to its control. In order to thrive in rapidly changing circumstances, SDTC continually explores new opportunities to develop an even stronger model to ensure that the continued development and adoption of Canadian clean technologies.

SDTC is consistently evolving, as is the economic landscape. Operating, funding, and returns models for Government entities must change. SDTC recommended this two years ago, requesting changes to its model. Since then, SDTC has developed a radically different and expanded vision that will enable it to deliver even greater returns to Canada at less cost to the Government.

As part of this evolution, SDTC has explored new ways of directing funds into the SD Tech Fund. The Foundation will continue to focus on securing private sector follow-on financing and becoming the partner of choice for large corporations looking to adopt innovative technologies. SDTC has been increasing its engagement with large corporations who are seeking a suite of technology options to increase the efficiency and profitability of their operations.

One proposed change would include the institution of a financial mechanism (equity through warrants) that would allow successful SDTC-funded companies that have surpassed certain commercialization benchmarks to return some funds back into SDTC. Such a structure would help to replenish the fund, perpetuating the success of the SDTC process and allowing for even greater return on public investment.

An additional returns-based mechanism is the development of a SDTC-managed fund that would co-invest with the private sector. Under this direct co-investment model, SDTC would match private sector investment in projects that have been identified and vetted by the venture capital community, Finance Canada, and SDTC. This model would provide rapid access to financing for globally competitive companies at a crucial point in their commercialization efforts, and enable more efficient syndication of investors and increase their capacity to win contracts in international markets. This would allow a more returns-oriented approach, demonstrating the robust capacity of the SDTC model to do more with less. Further, this will help boost venture capital performance in Canada, help address this policy gap, and lead to revitalizing the Canadian venture capital community. Note that cleantech represents about 20 percent of venture investment in Canada, just behind the ICT category.

Expanded Partnerships for Increased Results

When SDTC was formed in 2001, clean technology was in its infancy. Today, it is a rapidly growing part of the Canadian economy and many new players have entered the space. In order to achieve its mandate, SDTC needs to engage with a wide variety of stakeholder communities who will each play a role in this emerging cleantech sector.

The consortium approach that is central to the SDTC model requires an active and expanding network of viable partnerships. Through its project-funding model SDTC has forged a network and developed a comprehensive proprietary database with more than 7000 entities across the country—helping to solidify Canada’s cleantech infrastructure. One objective of this approach is to build and encourage innovative collaboration and partnering among private, academic and non-profit sectors. SDTC structures partnerships in a number of ways, including:

1. Co-funding demonstration partners, who work with SDTC at the technology development and demonstration stage by acting as a demonstration host or a co-investor for an SDTC-supported technology.

2. Follow-on financing partners work with SDTC at the commercialization stage by investing in an SDTC-funded company at the post-project stage.
Technology adoption partners (TAPs) work with SDTC at the stage of early market entry of SDTC supported technologies by incorporating the technology into the TAP’s own business or providing it as a product or component of the TAP’s product offerings to end-use customers. Some current TAPs include Bombardier Inc., Enbridge Inc., General Electric Corporation, and Ledcor Group of Companies.

SDTC has entered into partnerships around emerging clean technology opportunities with leading corporations such as Cenovus, Encana, and Veolia and is actively working with organizations such as organizations such as The Proctor & Gamble Company, Wal-Mart Stores Inc., Canadian Tire Corporation Ltd., and Loblaw Companies Ltd. To date, MOUs with corporations have led to $22 million in investment into SDTC companies.

**Relevance Across Government**

SDTC is funded by the Government of Canada and is accountable to Parliament through the Minister of Natural Resources. Environment Canada and Industry Canada are also key departments involved in the work of the Foundation. As clean technologies are adopted into all the major sectors of the economy, SDTC’s involvement has increasing relevance to all levels of government across the country.

SDTC has contributed its cleantech expertise to many federal programs within Industry Canada, Foreign Affairs and International Trade, Transport Canada, Agriculture and Agri-Food Canada, Fisheries and Oceans, and National Defence. Also, it has worked with such federal partners as Export Development Canada (EDC).

SDTC supports numerous innovation initiatives and is complementary to programs across the federal government. As of June 30, 2012, SDTC has funded into 93 projects which have received upstream funding from the Government of Canada, including 26 that have received IRAP/NRC funding and 17 who have received NRCan/CANMET funding. SDTC assists by commercializing innovation arising from these departments, realizing value on the early-stage intellectual property that has been created.

SDTC will continue to work with Environment Canada and NRCan to strengthen the innovation ecosystem and demonstrate SDTC’s critical value to federal officials within SDTC’s two key departments and beyond.

Additionally, SDTC has strong relationships with provincial governments. SDTC has been involved in the establishment of three provincial funds and has collaboration partnership agreements with five provinces. SDTC has entered into partnership agreements and/or contributed to the establishment of cleantech funds in British Columbia, Alberta, Ontario, Quebec and Nova Scotia. These partnerships have enabled SDTC to establish a common dialogue on cleantech trends and opportunities, and led to an additional $132 million in direct funding into SDTC supported companies.

SDTC has active, on-going agreements across Canada:

- **Ontario’s Ministry of Research and Innovation (MRI)**
- **British Columbia’s Innovative Clean Energy (ICE) fund and BioEnergy Network (BCBN)**
- **Alberta Innovates, CCEMC, and Alberta Enterprise Corp.**
- **Quebec’s Ministry of Economic Development and Innovation (MDEIE), and Energy Efficiency Agency (AEEQ)**
- **Innovacorp in Nova Scotia**
1 About the Funds

Sustainable Development Technology Canada (hereafter referred to as SDTC and/or the Foundation) was established by the Government of Canada with the mission to “act as the primary catalyst in building a sustainable development technology infrastructure in Canada.”

After a technology leaves the research stage, but before it is ready for commercialization, it often encounters a financing gap. At this stage, it is often difficult to secure funding due to financial and market risks related to the unproven nature of the technology. SDTC helps bridge this gap in two ways. Firstly, SDTC provides funding for projects that allow technologies to prove their value in a ‘real world’ demonstration. Secondly, SDTC works with these early stage companies to build their value proposition and strengthen their business. SDTC provides this funding from one of two funds totaling $1.09 billion.

The first fund is the $590 million SD Tech Fund™, which is aimed at supporting the development and pre-commercial demonstration of clean technology solutions. The fund, established in 2001, is to direct a total of $150 million to support technologies that address clean water and clean soil issues and the balance of the fund (approximately $440 million) to support technologies that address climate change and clean air issues. The second fund, established in 2007, is the $500 million NextGen Biofuels Fund™ (NGBF), which is aimed at supporting the establishment of first-of-kind large demonstration-scale facilities for the production of next-generation renewable fuels and co-products in Canada.

The Foundation’s mandate, governance, operations, performance requirements, and accountability are defined in funding agreements that have been executed by the Foundation and the Ministers of both Natural Resources Canada (NRCan) and Environment Canada. Under the terms of the funding agreements, the Foundation is required to “provide a corporate plan as well as a summary of the corporate plan annually to the Minister.” The SDTC 2013 Corporate Plan, of which this report is a summary, fulfills this obligation.

2 Performance Expectations

The Foundation ensures accountability through an extensive performance and evaluation framework known as an evaluation logic model, of which there is one for each fund. This model is designed to measure the Foundation’s progress toward its primary goals—which consist of the overarching mission and the three supporting goals listed below—by identifying operational activities and assessing their results. The three supporting goals are as follows:

a) Develop and demonstrate new sustainable development technologies related to climate change, clean air, clean water, and clean land, in order to make progress toward sustainable development;

b) Foster and encourage innovative collaboration and partnering amongst diverse persons in the private sector and in academic and not-for-profit organizations to channel and strengthen the Canadian capacity to develop and demonstrate sustainable development technologies with respect to climate change, clean air, clean water and clean land; and,

c) Ensure timely diffusion of new sustainable development technologies in relevant market sectors throughout Canada.

Compliance, Audit and Evaluation

As part of its transparency and accountability, SDTC is required to undergo a number of evaluation and auditing activities, which are specified in the funding agreements. To date, SDTC has participated in 7 audits and evaluations related to the SD Tech Fund™ and NGBF, and has participated in two audits conducted by the Commissioner of the Environment on Sustainable Development (CESD) on the Kyoto Implementation Act in 2009 and 2010. SDTC has received positive reviews from the multiple audits.

16. NGBF defines renewable fuels as any alternative to gasoline, diesel or heating oil that is derived from biomass. Next-generation renewable fuels means any Renewable Fuels derived from production pathways that are not widely commercially used. For greater clarity this refers to the use of (i) non-traditional renewable feedstocks such as lignocellulosic materials (including fast-growing grasses, agricultural residues and forest biomass); and (ii) non-conventional conversion technologies.
The most recent audit was the Value-For-Money (performance audit) undertaken by KPMG, on behalf of Natural Resources Canada, which was completed in July 2011. The audit report attests to the efficiency and effectiveness of SDTC’s processes and reports favourably on the matter of reasonableness of SDTC’s Operating Expenses.

A summary of the Treasury Board of Canada’s evaluation of the role of foundations as public policy instruments is included in this report, demonstrating that SDTC’s general management and overhead costs are significantly below the average observed across other foundations. This independent analysis confirms that SDTC is an effective instrument of Government.

3 Actions and Results – SD Tech Fund

Under the SD Tech Fund evaluation logic model, actions undertaken by the SD Tech Fund can be broken down into nine work scopes, or areas of activity, each of which supports one or more of the primary goals of the Foundation. The following sections will assess the actions undertaken by the Foundation between July 1, 2011 and June 30, 2012 (the reporting period) in each of these areas of activity.

3.1 Protect SDTC’s Investment

To achieve its mandate and make prudent use of public money, SDTC must ensure that it invests in the right technologies with the right management under the right terms and conditions. Key highlights this year include:

1. Process and schedule

   Results

   • Two funding rounds conducted totaling $70 million in allocations
   • 238 projects approved to date for a total of $581 million of SDTC project funding
   • 30 workshops and webinars delivered to build Canadian applicant capacity
   • A regular review of projects facing difficulties with ongoing remedial action affecting $32 million of allocations. These funds were made available to fund other projects.

   Planned Actions

   • As previously reported, SDTC has funds to conduct a partial round in the second half of 2012 and will require additional capital to fund new projects in 2013
   • SDTC has launched a Virtual Incubator to engage entrepreneurs earlier in the funding cycle and provide focused guidance

2. Project selection criteria

   Results

   • Continued delivery of Expert development webinars
   • Ongoing outreach to ensure market relevance of selected projects

   Planned Actions

   • Continued in-house development to stay current with market needs
   • Continued refinement of SDTC’s expert roster to reflect portfolio and market needs
3. Integrating funding with the financial sector

Results

- SDTC has continued its significant leverage of the private sector financing—with 81% of the non-SDTC project funding coming from the private sector.
- SDTC-funded companies have attracted 65% of the $126 million in venture capital funding that was invested in the cleantech sector in 2011.

Planned Actions

- Continued outreach to engage private sector in SDTC projects.

3.2 Project Funding

As of June 30th, 2012, SDTC has funded 238 projects for a cumulative total of $2.13 billion in total project value. SDTC has met all of its Funding Agreement allocation requirements for climate change, clean air, clean water, and clean soil, with 89 percent of the portfolio having two or more environmental benefits. SDTC has also met its requirements for funding $50 million into the hydrogen economy, and $50 million to cleaner fossil fuels. SDTC is currently capitalized to conduct only one funding round in the second half of 2012, and will require additional capital to fund new projects in 2013.

3.3 Attract Private Sector Capital to SDTC Portfolio Technologies

As of June 30th, 2012, SDTC has funded 238 projects for a cumulative total of $2.13 billion in total project value. SDTC continues to grow its Follow-on Financing initiative, with 52 SDTC companies having raised an additional $2.3 billion from the private sector which is entirely additional to the “in project” funding. In the past 12 months, follow-on financing levels have totaled $519 million, representing the highest annual amount to date. Further, the international attractiveness of SDTC’s funded companies has resulted in over 57 percent of this follow-on financing coming from sources outside of Canada. SDTC continued to demonstrate active involvement in venture capital, public market, and debt finance events, and intends to continue this involvement with tailored approaches to each asset class. SDTC has developed and in 2012/2013 intends to launch its Customer Relationship Management system to enable efficient matching between companies and investors.

3.4 Create Go-to-Market Consortia

As of June 30th, 2012, SDTC’s portfolio comprised approximately 900 consortia partners. SDTC has worked with these partners as projects near completion to ensure timely diffusion into the market. SDTC’s Technology Adoption Partnership initiative has engaged 35 multi-national enterprises that have subsequently entered into commercial discussions with SDTC portfolio companies. SDTC has also entered into various Memoranda of Understanding (MOUs) with provincial governments. Since 2003, provincial collaborations have resulted in $132 million in funding into 69 SDTC projects. More recently, SDTC has begun similar MOUs with select Canadian companies. This has already resulted in $37 million in transactions to date. SDTC will continue to engage technology adopters through this initiative as the momentum continues to develop.

3.5 Broker Non-Portfolio Projects

While not all projects meet SDTC’s eligibility criteria, they nonetheless have a role to play in developing a sustainable technology infrastructure in Canada. SDTC has and plans to continue providing coaching and advice to these entrepreneurs, as well as directing them to other sources of funding (such as IRAP, NSERC, etc.).
3.6 Identify Solution to Adoption Barriers

In 2011/2012, SDTC participated heavily in the two major Federal Reviews on Innovation: the Review of Federal Support to Research & Development, and the Aerospace Review. Both of these reports support the use of SDTC as a policy solution to overcome existing commercialization barriers for innovation in Canada. SDTC is supported by its portfolio companies and by the multinational enterprises (who are adopters of these technologies) in its input into these two major reviews. In 2012/2013, SDTC will continue to identify market gaps and recommend policy solutions through follow-on work of the review panels.

3.7 Workshops and Outreach

SDTC remained active in key cleantech-related events, being a speaker at 21 events between July 2011 and June 2012. SDTC held 75 meetings with ministers, deputy ministers and other senior government officials to increase their awareness of the importance of the cleantech sector to Canada. SDTC will continue to engage a broad stakeholder base throughout 2012/2013 to continue the development of a sustainable technology infrastructure in Canada.

3.8 Communications

SDTC remains focused on providing recognition to Canada for its support of the Foundation. These are reflected in the eleven events with federal ministers conducted between July 2011 and June 2012. Further, SDTC appeared in 2,682 articles across 22 countries. SDTC will continue to utilize a variety of avenues to reach key audiences, including funding announcements for the Ministers of Natural Resources and Environment Canada.

3.9 Business Case for Sustainable Development

Between July 2011 and June 2012, SDTC identified the Aerospace, Defense and Security industry as the focus of a future SD Business Case, given this industry is in transition. ADS companies have engaged SDTC in strategic business planning exercises and have partnered with SDTC’s portfolio companies. This business case will examine an overall strategy for Canada to leverage its defense procurement—elements of which SDTC has already contributed into the two major Federal Reviews.

4 Actions and Results – NextGen Biofuels Fund

The NextGen Biofuels Fund (NGBF), founded in September 2007, supports the establishment of first-of-kind large demonstration-scale facilities for the production of next-generation renewable fuels and co-products in Canada.

4.1 2011/2012 Results

Having navigated a challenging industry, NGBF completed due diligence and secured approval from SDTC’s Board for three Applications for Funding between July 2011 and June 2012. SDTC also entered into one Preliminary Contribution Agreement (PCA), and was in the process of negotiating two additional PCAs as at June 2012. Five Applications for Funding (AFFs) were received over the same period. NGBF continues to receive a steady flow of Indications of Interest. The NGBF Interim Evaluation was launched, and quarterly meetings with key departments (NRCan, Environment Canada, and Agriculture Canada) have been conducted.

4.2 2012/2013 Planned Actions

In 2012/2013, NGBF will focus on final investment decisions for three projects, four front-end project development decisions, and four preliminary contribution agreements. NGBF will also finalize the Interim Evaluation per the NGBF Funding Agreement. Targeted outreach activities will be conducted in order to maintain a healthy deal flow.
5 Financial Plan

5.1 Grants

SDTC continues to operate to distribute the funds in an effective and efficient manner, fulfilling the mandate it has been given. As of June 30, 2012, the investment portfolio for the SD Tech Fund had an overall market value of $245 million while the NGBF had $58 million. It should be noted that NGBF funds are obtained from the Government of Canada according to cash flow requirements, as per the NGBF Funding Agreement (both amounts are after operational expenses and project disbursements). These portfolio balances are comprised primarily of project funding which has been allocated, but not yet disbursed, as well as some accrued interest.

5.2 Budget

The planned operating expenditure budget for the SD Tech Fund is approximately $11.2 million in 2013, and the preliminary budget for 2014 is $9.1 million. For the NGBF, the planned operating expenditure budget for 2013 is $3.0 million and the preliminary expenditure budget for 2014 is $3.4 million. The human resources required to undertake the NGBF Funding Agreement obligations are available to do so, cost effectively, because for the majority of the time these resources are directed towards the management and operations of the SD Tech Fund. This reflects the fact that the NGBF is predicated on the existence of the SD Tech Fund and is allocated a portion of SD Tech Fund overhead based on usage of staff.

5.3 Allocation and Disbursements

In 2011, SDTC disbursed $82 million of allocated funds, the highest amount of any year. Annual project disbursement payments are projected to be $90 million in 2012, between $95 million and $115 million in 2013 and between $80 million and $100 million in 2014.

The disbursement timing is driven by the applicant’s ability to meet planned schedules. As of June 30, 2012, the SD Tech Fund allocation was $581 million. SDTC will require additional capital to be able to allocate funds beyond 2012.

As for the NGBF, approved projects are projected to require $300 million before the end of March 2017, which is the end of the disbursement period as per the NGBF Funding Agreement. Two additional Applications for Funding (AFF), if successful, would require allocation of the remaining $200 million of the NGBF funds in 2012/2013.

6 Risks and Mitigation

As part of its corporate risk management strategy, SDTC regularly identifies, assesses and monitors existing and emerging business and organizational risks. For each of these risks, SDTC develops and, as necessary, implements a mitigation strategy. Current issues that may pose risks to the SD Tech Fund in the upcoming 12 months (and which are discussed at length in the body of the report) include:

- Results and Economic Risks to Canada,
- Canadian Business Productivity and Competitiveness Risk,
- Economic and Market Uncertainty Risk (which has now been reduced substantially),
- Regulatory and Policy Risk (which has also been reduced substantially),
- Evaluation Risk; and,
- Governance Risk
Current issues that may pose risks to the NextGen Biofuels Fund include:

- Technology and Scale-up Risk,
- Federal Biofuel Policy Risk,
- Economic Climate Risk,
- Regulatory Harmonization Risk,
- Natural Gas Risk; and,
- Financing Risk

The Foundation will continue to work with stakeholders—including technology developers, industry, financial organizations, and governments—to identify these risks and to develop and implement mitigation strategies.
Executive Summary

SD Tech Fund Evaluation Logic Model

Mission Statement

Goal A
SDTC will act as the primary catalyst in building a sustainable development infrastructure in Canada

Goal B
Purpose of the Fund
Develop and demonstrate new sustainable development technologies (SDTs) related to climate change, clean air, clean water and clean land, in order to make progress towards sustainable development.

Work Scope:
1. Protect SDTC’s Investment
Provide due diligence screening and excellence in contract definition and project management. Integrate funding activities with the financial sector and, where appropriate, complement other programs.
2. Project Funding
Invest in creative collaborative partnerships (representing multiple players in the innovation chain) that enable timely development and demonstration of technology solutions for climate change, clean air, clean water and clean land.
3. Attracting Capital to Clean Tech
Attract additional financing into the clean technology sector and increase the receptivity of the investment community for sustainable development.
4. Create Go-To-Market Consortia
Build and encourage innovative collaboration and partnering among private, academic and non-profit sectors.
5. Broker Non-Portfolio Projects
Broker relationships that accelerate the dissemination of SDTs towards the marketplace.
6. Identify Solutions for Barriers to Adoption
Report and communicate to stakeholders and partners, including identification and advocacy around market barriers, energy policy, capital availability, product codes, and standards and regulation.
7. Outreach
Increase capacity within economic sectors for accessing project funding and improving their management capability.
8. Communications
Educate, raise awareness and promote benefits of SDTs.
9. Business Case for SD
Build the business case for SDTs and derive a national strategy for sustainable development (SD).

Goal C
Foster and encourage innovative collaboration and partnering amongst diverse persons in the private sector and in academic and not-for-profit organizations to channel and strengthen the Canadian capacity to develop and demonstrate SDTs with respect to climate change, clean air, clean water and clean land.

Work Scope:
1. Protect SDTC’s Investment
Provide due diligence screening and excellence in contract definition and project management. Integrate funding activities with the financial sector and, where appropriate, complement other programs.
2. Project Funding
Invest in creative collaborative partnerships (representing multiple players in the innovation chain) that enable timely development and demonstration of technology solutions for climate change, clean air, clean water and clean land.
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8. Communications
Educate, raise awareness and promote benefits of SDTs.
9. Business Case for SD
Build the business case for SDTs and derive a national strategy for sustainable development (SD).

Goal D
Ensure timely diffusion by funded recipients of new SDTs in relevant market sectors throughout Canada.

Work Scope:
1. Protect SDTC’s Investment
Provide due diligence screening and excellence in contract definition and project management. Integrate funding activities with the financial sector and, where appropriate, complement other programs.
2. Project Funding
Invest in creative collaborative partnerships (representing multiple players in the innovation chain) that enable timely development and demonstration of technology solutions for climate change, clean air, clean water and clean land.
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7. Outreach
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8. Communications
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9. Business Case for SD
Build the business case for SDTs and derive a national strategy for sustainable development (SD).
**Executive Summary** - SDTC 2013 Corporate Plan

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**SD Tech Fund Evaluation Logic Model**

**Purpose of the Fund**

**Goal B**
Develop and demonstrate new sustainable development technologies (SDTs) related to climate change, clean air, clean water and clean land, in order to make progress towards sustainable development.

**Work Scope:**

**Goal C**
Foster and encourage innovative collaboration and partnering amongst diverse persons in the private sector and in academic and not-for-profit organizations to channel and strengthen the Canadian capacity to develop and demonstrate SDTs with respect to climate change, clean air, clean water and clean land.

**Work Scope:**

**Goal D**
Ensure timely diffusion by funded recipients of new SDTs in relevant market sectors throughout Canada.

**Work Scope:**

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**Mission Statement**

**Goal A**
SDTC will act as the primary catalyst in building a sustainable development infrastructure in Canada.

**Work Scope**

1. **Protect SDTC's Investment**
   - Provide due diligence screening and excellence in contract definition and project management. Integrate funding activities with the financial sector and, where appropriate, complement other programs.

2. **Project Funding**
   - Invest in creative collaborative partnerships (representing multiple players in the innovation chain) that enable timely development and demonstration of technology solutions for climate change, clean air, clean water and clean land.

3. **Attracting Capital to Clean Tech**
   - Attract additional financing into the clean technology sector and increase the receptivity of the investment community for sustainable development.

4. **Create Go-To-Market Consortia**
   - Build and encourage innovative collaboration and partnering among private, academic and non-profit sectors.

5. **Broker Non-Portfolio Projects**
   - Broker relationships that accelerate the dissemination of SDTs towards the marketplace.

6. **Identify Solutions for Barriers to Adoption**
   - Report and communicate to stakeholders and partners, including identification and advocacy around market barriers, energy policy, capital availability, product codes, and standards and regulation.

7. **Outreach**
   - Increase capacity within economic sectors for accessing project funding and improving their management capability.

8. **Communications**
   - Educate, raise awareness and promote benefits of SDTs.

9. **Business Case for SD**
   - Build the business case for SDTs and derive a national strategy for sustainable development (SD).

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**Outputs**

- Consortia formed that bridge structural break (pre-venture capital gap) in the innovation chain.
- Alliances formed with organizations that support future diffusion of SDTs.
- Contributions to projects to develop, and demonstrate technologies—bridge financing gap.
- Policy advocacy influences investing, innovation and energy policies.
- Increased capacity among stakeholder groups and partners for SDTs.
- Increased knowledge, awareness and participation in SD—all sectors.
- Sectoral road maps, business case, comparison of Canadian capacity for SD, advocacy of policies.

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**Outcomes/Impacts**

- Private sector contributions leveraged by two or three times in fund portfolio.
- Follow-on support. Investment as a result of, and after, SDTC investment.
- Technology solutions addressing climate change, clean air, clean water and clean land.
- Increased market for uptake of SDTs.
- Increased knowledge, awareness and participation in SD sector (investment, intellectual property, organizations/companies).
- Increased market receptors for and responsiveness to SDTs. National strategy for SDTs.
- Market for SDTs transformed.
- Environmental impacts/benefits.
- Global profile of Canada and Cdn. companies increase in climate change and SDTs.
- Greater market acceptance and diffusion of SDTs.
- Increased SD infrastructure in Canada.

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Executive Summary

NextGen Biofuels Evaluation Logic Model

Mission Statement

SDTC will act as the primary catalyst in building a sustainable development infrastructure in Canada

Purpose of the Fund

NGBF Purpose (c)
Encourage retention and growth of technology expertise and innovation capacity for the production of next-generation renewable fuels in Canada

Work Scope:
1 2 3 4

NGBF Purpose (a)
Facilitate the establishment of first-of-kind large demonstration-scale facilities for the production of next-generation fuels and co-products

Work Scope:
2 3 4 5 6 7

NGBF Purpose (b)
Improve the sustainable development impacts arising from the production and use of renewable fuels in Canada

Work Scope:
3 4 5 6 7

Activities/Work Scope

1 Outreach
Identify and recruit candidate technologies from international outreach and SD Tech Fund.

2 Develop SDTC Knowledge Base
Collect and conduct biofuels industry studies, identify and maintain roster of experts.

3 Select Qualifying Projects
Guide and advise proponent. Proponent develops Application for Funding (AFF). Conduct due diligence review of AFF, including eligibility criteria and technology readiness.

4 Participate in Project Assurance Process for Pre-Construction Phases
Monitor, advise, assist planning. NGBF expert reviewers conduct due diligence review of stage report for funding decision, provide recommendations to Project Review Committee and Board for decisions.

5 Contribute to Structuring the Project Financing
Advise and assist structure of financing.

6 Participate as an Active Investor in Construction, Commissioning and Plant Operations
Monitor, advise assist, identify barriers, contribute to solutions.

7 Repay/Close-Out
Plant repays NGBF investment and/or operates for 10 years.

Outputs

Decision to fund or not fund next stage.

Purchase capital equipment, employ workers.

Purchase inputs, waste products or perennial crops from marginal land.

Produce next-gen renewable biofuels and co-products.

Flow funds to projects or terminate project.

Protect public funds.

Employ professional services.

Impacts of capital investment.

Learning, technical improvements, capacity building with applicant companies and projects, strengthen project.

Reduce sensitivity of feedstock price/supply.

Benefits to owners of inputs.

Displace gasoline and diesel, help meet Renewable Fuel Standard.

Co-products displace products from traditional sources.

Engage financial sector, improve access to financing for follow-on projects.

Proven technology at commercial scale.

First mover advantage.

Increased Canadian expertise for production of next-gen biofuels.

Expand or replicate plant, and/or license technology.

Environmental benefits relative to grain ethanol and/or hydrocarbon fuels, cleaner production of co-products.

Net economic benefits from reduced consumption of hydrocarbon-based fuels and products, cleaner production processes, private returns to investors and owners of inputs.
Purpose of the Fund

NGBF Purpose (c)

Encourage retention and growth of technology expertise and innovation capacity for the production of next-generation renewable fuels in Canada

Work Scope:

NGBF Purpose (a)

Facilitate the establishment of first-of-kind large demonstration-scale facilities for the production of next-generation fuels and co-products

Work Scope:

NGBF Purpose (b)

Improve the sustainable development impacts arising from the production and use of renewable fuels in Canada

Mission Statement

SDTC Mission

SDTC will act as the primary catalyst in building a sustainable development infrastructure in Canada

Activities/Work Scope

1. Outreach

Identify and recruit candidate technologies from international outreach and SD Tech Fund.

2. Develop SDTC Knowledge Base

Collect and conduct biofuels industry studies, identify and maintain roster of experts.

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Guide and advise proponent. Proponent develops Application for Funding (AFF). Conduct due diligence review of AFF, including eligibility criteria and technology readiness.

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Monitor, advise, assist planning. NGBF expert reviewers conduct due diligence review of stage report for funding decision, provide recommendations to Project Review Committee and Board for decisions.

5. Contribute to Structuring the Project Financing

Advise and assist structure of financing.

6. Participate as an Active Investor in Construction, Commissioning and Plant Operations

Monitor, advise assist, identify barriers, contribute to solutions.

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Plant repays NGBF investment and/or operates for 10 years.

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Employ professional services.

Purchase capital equipment, employ workers.

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Produce next-gen renewable biofuels and co-products.

Impacts of capital investment.

Benefits to owners of inputs.

Displace gasoline and diesel, help meet Renewable Fuel Standard.

Co-products displace products from traditional sources.

Engage financial sector, improve access to financing for follow-on projects.

Proven technology at commercial scale.

First mover advantage.

Reduce sensitivity of feedstock price/supply.

Impacts of capital investment.

Net economic benefits from reduced consumption of hydrocarbon-based fuels and products, cleaner production processes, private returns to investors and owners of inputs.

Environmental benefits relative to grain ethanol and/or hydrocarbon fuels, cleaner production processes, private returns to investors and owners of inputs.

Displace gasoline and diesel, help meet Renewable Fuel Standard.

Increased Canadian expertise for production of next-gen biofuels.

Environmental benefits relative to grain ethanol and/or hydrocarbon fuels, cleaner production processes, private returns to investors and owners of inputs.

Learning, technical improvements, capacity building with applicant companies and projects, strengthen project.

Energy, technical improvements, capacity building with applicant companies and projects, strengthen project.

Impacts of capital investment.

Net economic benefits from reduced consumption of hydrocarbon-based fuels and products, cleaner production processes, private returns to investors and owners of inputs.

Increased Canadian expertise for production of next-gen biofuels.

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