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Technology Partnerships  
Canada  
An Agency of  
Industry Canada

Partenariat technologique  
Canada

Un organisme  
d'Industrie Canada

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BUSINESS PLAN 2003 • 2004



Canada

**TECHNOLOGY**

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**BUSINESS PLAN**

**FOR**

**FISCAL YEARS**

**2003-2004 TO 2005-2006**

**INCLUSIVE**

## TECHNOLOGY PARTNERSHIPS CANADA (TPC)

*TPC – An agency of Industry Canada  
“... making strategic high-risk investments  
in R&D to achieve specific objectives. . . .”*

### **TECHNOLOGY PARTNERSHIPS CANADA: AN INNOVATIVE TPC FOR AN INNOVATIVE ECONOMY**

#### **Innovation**

The National Summit on Innovation and Learning recommended that the government “Expand successful programs that support commercialization by broadening and deepening the mandates of programs (for example, . . . Technology Partnerships Canada).”

**National Summit on Innovation and Learning  
Held in Toronto, Ontario, on November 18 and 19, 2002**

#### **Climate Change**

A key instrument of Canada’s Climate Change Plan is “A coordinated Innovation Strategy that allows Canada to benefit fully from the innovation possibilities of our climate change agenda and builds on programs such as Technology Partnerships Canada. . . .”

**Climate Change Plan for Canada  
Tabled in the House of Commons on November 21, 2002**



## EXECUTIVE SUMMARY

Technology Partnerships Canada (TPC) is a technology innovation fund that invests strategically in high-risk industrial research and pre-competitive development projects. TPC's participation leverages private sector investment that ultimately has the impact of advancing the technological capabilities of Canadian industry. The agency supports key technologies and sectors, namely environmental and enabling (E&E) technologies and the aerospace and defence (A&D) sector. Within these mandated areas, TPC encourages the development of small and medium-sized enterprises (SMEs) in all regions of Canada.

TPC's portfolio has grown at a rapid pace to become a high-profile, high-value government asset.

- **2002–2003 Investments:** During 2002–2003, TPC invested over \$433 million in 120 projects, which are forecasted to leverage over \$1.3 billion in additional investments and are projected to create or maintain over 7,600 jobs during the life of the investments.
- **TPC's Portfolio:** On a portfolio basis, as of March 31, 2003, TPC's active investments total over \$2.3 billion in 537 projects, which are forecasted to leverage over \$9.5 billion in additional investments and are projected to create or maintain over 43,900 jobs during the life of the investments.
- **Support to SMEs:** TPC's portfolio includes investments with SMEs totalling over \$811 million (34.6 percent of funding) in 468 projects (87.2 percent of projects).

In view of the rapid growth of TPC's portfolio, it was deemed appropriate for the agency to review its operations to date to identify areas where improvements could be made to its management practices, policies and procedures. The review was conducted from both an administrative perspective (i.e., resources needed to effectively manage the portfolio and funding for program administration) and a budget perspective focussing on the adequacy and effectiveness of TPC's contribution budget in meeting public policy goals and industry demand on the program. On February 27, 2003, the results of the review were reported to the Cabinet Committee for Economic Union (CCEU). During 2003–2004, TPC will be dealing with several outcomes of the review intended to strengthen the management of its portfolio, including improved recognition of the benefits to Canada delivered by industries in which TPC helps to fund their technology development.

There is a growing appreciation across the Public Service of the need to strengthen risk management practices and develop a more strategic and corporate-wide focus. In that regard, risk

management is one of Industry Canada's Modern Comptrollership priorities. TPC has been proactive in supporting this priority through the development and implementation of a comprehensive Portfolio Risk Management System (PRMS). It is TPC policy to operate a consistent and well-documented PRMS with the aim of ensuring that sound business decisions are made within the boundaries of risk tolerance, organizational objectives and resources. PRMS, which incorporates an initial detailed risk assessment and a series of ongoing updates, is a key component of monitoring TPC's investments. During the planning period, TPC will continue to refine its risk management practices and actively support the department's ongoing initiatives in his area. In fact, a number of TPC's activities related to risk management have been projected outside of Industry Canada and are recognized as being leading-edge.

The February 2003 Federal Budget Plan indicated that Industry Portfolio programs such as TPC would be asked to report on how their respective contributions to Canada's climate change objectives can be improved within existing resource levels. As a technology investment fund, TPC has a proven track record in supporting the Government of Canada's priorities such as climate change objectives and sustainable development strategy. TPC has the experience and expertise to lever requisite government and private sector investment in the development and commercialization of innovative technologies that contribute to desired climate change outcomes. As of March 31, 2003, TPC has invested almost \$362 million in 27 climate change-related projects. In turn, these projects have leveraged over \$1.8 billion in private sector research and development (R&D) spending. During 2003-2004, TPC will position itself to continue its strong support to climate change, including implementation of Canada's obligations under the Kyoto Protocol and movement toward a hydrogen economy.

During 2003-2004, TPC will prepare and publish a *TPC Investment Strategy* to strengthen the current strategic direction and priorities for the portfolio and enhance its complementarity to other Government of Canada initiatives, including increased horizontal outreach and collaboration. The strategy will provide a valuable rationale for launching industry consultations that could result in a repositioning of TPC. In addition to dealing with the investment strategy and other significant and ongoing operational and administrative challenges, TPC will address a number of specific objectives, including:

- implementing a focussed **public relations, marketing and communications** strategy to effectively reposition TPC in a manner that enhances the program's credibility;

- strengthening the agency's **financial management** processes, particularly cash management, to optimize the use of program funds while remaining within the agency's authorized financial flexibilities;
- identifying and acquiring the **resources** needed for both today and tomorrow, including obtaining Treasury Board approval for increased program administration funding and recruiting competent and experienced staff, in order to strengthen the effective management of TPC's complex and rapidly growing portfolio, to continue to move in the direction of integrated risk management as outlined in the Modern Comptrollership Initiative, and to develop strategic outreach so that the agency is perceived as being transparent and operating in the long-term interests of Canadians; and
- continuing to **support key government priorities**, which on the immediate horizon will mean investing in projects that advance innovation, have strong climate change benefits, are targeted to the long-term outcome of a hydrogen economy, and help to meet Canada's obligations under the Kyoto Protocol (including putting into action the TPC investment mandate of translating industrial research findings into demonstration or pilot projects and prototypes).

The TPC program is undergoing an essential period of transformation. During the initial seven years of operations, the agency directed its resources at successfully launching the program's new investment approach. This concentration on operations has been highly successful in leveraging private sector investments in research, development and innovation in critical, leading-edge technologies. While continuing to invest in innovative projects, the agency must now take decisive action to consolidate the management of its portfolio, strategically reposition its investments through the development of a *TPC Investment Strategy*, and strengthen its organizational and administrative practices needed to focus on corporate support to the portfolio. This restructuring initiative, which is based on lessons learned over the past seven years, is essential for effective management of TPC's \$2.3 billion portfolio as well as the agency's ongoing support to key government priorities such as Kyoto.

TPC expects to be fully challenged during 2003–2004 as it works to achieve the initiatives and objectives outlined in this business plan.

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## **PART A: TPC – SUPPORTING KEY GOVERNMENT PRIORITIES**

### **1. THE AGENCY’S PURPOSE**

Technology Partnerships Canada’s (TPC’s) mandate and vision, which were approved by Treasury Board (TB) in TPC’s Special Operating Agency (SOA) Framework Document, are quoted below together with information on TPC’s investment approach, targeted sectors/technologies and benefits to provide a clear indication of the agency’s purpose.

#### **1.1 Mandate**

“In a context in which innovation is essential in an increasingly knowledge-based economy, TPC is a technology investment fund established to contribute to the achievement of Canada’s objectives such as increasing economic growth, jobs and wealth creation, and supporting sustainable development. TPC will advance and support government initiatives by investing strategically in research, development and innovation in order to encourage private sector investment, and so maintain and grow the technology base and technological capabilities of Canadian industry. TPC will also encourage the development of SMEs in all regions of Canada.

In an environment of continuing fiscal restraint, TPC will take an investment approach, targeting an average sharing ratio of not more than 33 percent (with typical project sharing ratios ranging between 25 percent and 30 percent). TPC will share with its private sector partners in the risks and the rewards, the rewards of the program consisting of both financial returns and economic benefits. TPC will manage the contributions so that all repayments are recycled into TPC, allowing potential for future growth.”

It should also be noted that:

- in exceptional circumstances, when the Minister deems it essential to the success of the project, and deems it justified by the potential economic benefits, the sharing ratio may reach, but will not exceed, 50 percent of the eligible costs of the project; and
- under the eligible activity of pre-competitive research, TPC can invest in the translation of industrial research findings into a plan, blueprint or design for demonstration or pilot projects, and prototypes.

## **1.2 Vision**

“TPC will be a professional organization, dedicated to working in close partnership with other parts of the federal government and the private sector, capable of making strategic high-risk investments in R&D to achieve specific objectives.”

## **1.3 Investment Approach**

Establishing TPC in 1996, with its new investment approach, has proven to be visionary. This innovative approach of government supporting the private sector through investment, rather than subsidy, has been accepted by both the public and industry. Utilizing its unique investment approach, TPC has become a key instrument for the government to accelerate the commercialization of technology which is an important element of the Innovation Agenda. Through its investments to date, TPC has forged partnerships within key industry sectors and technologies which advance innovation and help to build Canada’s knowledge-based economy (KBE). Clearly, at all times TPC’s role as a patient capital investor is important for the enhancement of technology development as well as the benefits accrued; moreover, it is essential in today’s economic climate.

TPC must be effectively repositioned in a manner that enhances the program’s credibility so that the agency is confidently known as being an accountable and transparent organization that unquestionably operates in the interests of Canadians. In this regard, during 2003–2004, TPC will prepare and publish a *TPC Investment Strategy* to confirm strategic direction and priorities for the portfolio. The strategy will provide a valid rationale for the establishment of consultations with industry using a frank dialogue to work toward the goal of repositioning TPC. At the same time, the agency will strengthen existing and build new partnerships with large, medium and small firms across Canada for the purpose of making innovation a reality in Canada.

## **1.4 Targeting Key Strategic Technologies**

TPC’s investments target key strategic technologies, including but not limited to:

- **wireless technologies**, to advance e-commerce, broadband and connectivity (e.g., next generation technology of voice and data convergence, e-commerce software, high-speed Internet and video wireless technologies);

- **biotechnology**, to develop fully integrated biotechnology capabilities, from research to production (e.g., human health – biopharmaceuticals, diagnostics, therapeutics, value-added agriculture and aquaculture, genomics, proteomics and bioinformatics);
- **environmental technologies**, to address climate change objectives, position Canada to move toward a hydrogen economy and meet sustainable development challenges (e.g., fuel cell technology, ethanol from biomass, stationary power generation, water treatment technologies);
- **advanced manufacturing and processing and advanced materials technologies**, to accelerate the development of strategic technologies through innovative projects that have high potential for strong secondary enabling effects (e.g., metal powders and high-purity metals, nanotechnologies, advanced design technologies, and process technologies related to materials recyclability; and
- **aerospace and defence**, to strengthen Canadian capabilities in a critical, knowledge-based sector (e.g., aircraft engine technology, avionics and electronics, and flight simulation).

### 1.5 Benefits from TPC's Investments

TPC's investments generate benefits for companies and Canada, including:

- increasing the technological capability and core competencies of the firm and its partners (i.e., sub-contractors, universities, etc.);
- creating and maintaining jobs, both during the Work (research and development) Phase and in the subsequent Benefits (production) Phase;
- employing highly qualified personnel;
- enhancing productivity and competitiveness for the firm and/or users of its technology and products;
- leveraging investment by the firm, both for the R&D project and for its subsequent growth;
- producing repayments not only for the original investment, but also on upside returns;
- generating reductions in greenhouse gases (GHG) through climate change investments that result in cleaner air with the potential for health care benefits for Canadians; and
- impacting positively on the wealth, well-being and quality of life of Canadians through public policy benefits (e.g., supporting innovation, advancing Canada's KBE by increasing economic growth, jobs and wealth creation and supporting the government's sustainable development and climate change initiatives).

## **2. OPERATING ENVIRONMENT SCAN**

The key factors, including global and domestic economic conditions, that could impact on TPC's operating environment during 2003–2004 are summarized below.

### **2.1 The Global Economy<sup>1</sup>**

The Bank of Canada maintains that the global recovery, particularly outside North America, is proceeding at a relatively slow pace. In fact, prospects for economic growth in 2003 for the United States, major overseas economies and emerging markets have moderated somewhat from predictions by the bank during October 2002. But, the bank continues to expect global economic growth to pick up appreciably in the second half of 2003 and into 2004. However, the global economic environment will remain challenging during 2003 as considerable downside risks remain for the world's economy. External risks include the ongoing impact of equity market declines on U.S. investor and consumer confidence, the geopolitical risks associated with the conflict in Iraq and disruption of Venezuelan oil production. The bank maintains that these factors likely played a role in the slowing of U.S. growth late in 2002 and could continue to negatively affect business investment and consumer sentiment in the near term.

U.S. economic growth, after slowing in the fourth quarter of 2002 by more than projected, should regain its momentum in 2003, supported by ongoing stimulative policies. In particular, if financial conditions continue to improve, the U.S. economy is expected to outpace growth capacity in the second half of the year, aided by a strengthening in capital spending. On an average annual basis U.S. real Gross Domestic Product (GDP) should increase by almost 3 percent in 2003. Japan is expected to undergo a gradual recovery from recession in 2003, although, given weaker external demand, the outlook for the next two years remains uncertain. In the rest of Asia, economic growth is expected to remain relatively strong. Growth is expected to be stronger in Europe in 2003 than in 2002, although it is forecasted to remain below 2 percent, which reflects sluggish domestic demand and slow recovery in the export sector.

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<sup>1</sup> *Sources:* Bank of Canada's, *Monetary Policy Report Update*, January 2003 and Government of Canada's, *The Budget Plan 2003*, February 2003.



## 2.2 The Canadian Economy<sup>2</sup>

The Bank of Canada reports that after expanding significantly faster than potential during the first half of 2002, the Canadian economy slowed to a growth rate close to potential in the second half of 2002. Nonetheless, the bank anticipates increased demand pressures will materialize in the second half of 2003 and into 2004. The bank also expects that the level of risk premiums in financial markets will continue to decline as corporate profitability and investor confidence solidify. This should improve the environment for business investment. The bank anticipates that the core rate of inflation will likely remain well above 2 percent because of one-off factors (e.g., substantial increase in the premiums for both auto and home insurance, increases in electricity prices in Ontario, the echo effect of temporary price discounting in the fourth quarter of 2001, and cost increases and strong demand in shelter, food and some services). The bank projects that the combined effect of these one-off factors is likely to have largely run its course by early 2004, and expects core inflation to move down to 2 percent in early 2004.

Private sector forecasters surveyed by the Department of Finance expect short-term interest rates of 3.3 percent in 2003 and 4.5 percent in 2004. Current private sector expectations for ten-year government bonds are at 5.4 percent in 2003 and 5.9 percent in 2004. Also, private sector forecasters expect continuing robust employment growth, with the unemployment rate falling to 7 percent by the end of 2003. Private sector economists forecast Canadian growth of 3.2 percent in 2003 and 3.5 percent in 2004. This growth is consistent with the expectation that the U.S. economic recovery will gain momentum in the second half of this year and into next year. Over the past two years Canada's economy has demonstrated remarkable resilience in the face of global weakness and uncertainty. In fact, the Organisation for Economic Co-operation and Development (OECD) and the International Monetary Fund (IMF) predict that Canada will outperform all G7 countries in growth in 2003.

Canada's productivity performance has improved significantly since 1997. Measured as real GDP per worker, labour productivity growth in Canada rose from an average of 1 percent per year over the 1980–1996 period to an estimated 1.5 percent over the 1997–2002 period. Growth in real GDP per hour worked in the Canadian business sector was even stronger, with productivity growth averaging 2.1 percent from 1997 to 2002, up from 1.2 percent during the 1980–1996 period. Over the 1997–2002 period, Canada ranked second in the G7 in productivity growth – an improvement from second to last during the 1980–1996 period. The shift to

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<sup>2</sup> *Sources:* Bank of Canada's, *Monetary Policy Report Update*, January 2003 and Government of Canada's, *The Budget Plan 2003*, February 2003.

budgetary surpluses from sustained deficits, a lower debt-to-GDP ratio, lower tax burdens and low inflation have stimulated investment and contributed to Canada's improved productivity growth.

### **2.3 Issues Impacting TPC's Operating Environment**

During the planning period, TPC's operating environment could be impacted by a number of key issues, including those summarized below:

- Obtaining TB approval for an increase to program administration funds is key to effective management of the portfolio. This is an important issue that the agency must resolve early in 2003-2004.
- The private sector business environment is marked by uncertainty generated by Enron, WorldCom, Arthur Anderson, etc., and related corporate governance issues. The primary fall-out from this uncertainty is that business and government are taking less risk and insisting on more accountability and transparency, which could impact on TPC's investments.
- The down turn in two major sectors that were previously fast tracked – aerospace and information and communications technology (ICT) – will influence previous assumptions regarding support to these sectors. In some cases, private sector risk capital will not be available and TPC may experience increased demand.
- TPC must undertake extensive consultations with both industry and within government to deal with the restrictions inherent in the 1/3:2/3 rule that currently guides the agency's investments (i.e., 1/3 of TPC's total expenditures are to be targeted for environmental and enabling technologies).
- TPC must ensure that it is well situated as an instrument of choice to help implement the Kyoto Protocol and advance the government's climate change and sustainable development objectives, including contributing to development of the hydrogen economy.
- TPC will be required and must be positioned to continue its support to unplanned, large and sensitive issues related to maintaining, growing and developing Canadian industrial capabilities.
- TPC will be faced with ongoing pressures to continue to effectively manage its cashflow within the 20 percent authorized carry-over level.
- TPC's budget could be impacted by the ongoing government reallocation (\$1 billion) exercise announced in the 2003 budget to fund higher priorities of Canadians.

- It can be expected that criticism of the program will continue and TPC must respond in a consistent, factual manner through a focussed and effective communications plan. TPC needs to earn its press – and can further this goal, and at the same time meet new policy development initiatives, by strengthening the agency’s strategic alliances.
- Continued scrutiny by central agencies and other departments can be expected as TPC’s portfolio continues to expand. TPC will continue to maintain close contact with these entities, including regular information briefings on the agency’s operations and challenges, so that all parties have a better understanding of each others role.
- In summary, during 2003–2004 TPC’s operating environment will be influenced by:
  - uncertainty and less risk taking in the business community;
  - more accountability and transparency within business and government;
  - less availability of risk capital for some technologies – ICT and aerospace;
  - the need to support climate change, including Kyoto, the hydrogen economy and other public policy initiatives within existing resources;
  - the continued requirement for closely controlled cash management to avoid year-end lapses of contribution funds beyond the authorized 20 percent level;
  - a requirement to enhance the agency’s risk management processes and procedures;
  - ongoing government reallocation to fund higher priorities of Canadians;
  - ongoing media and other criticism of the program; and
  - continued scrutiny by central agencies and other government departments as TPC’s portfolio expands.

### **3. TPC AND RISK MANAGEMENT**

#### **3.1 Managing Risk**

TPC is a “passive” capital investor, taking no active part in the development of the project. Thus, as TPC does not take equity nor an active role in the management of the company, it must therefore deal with the significant risks involved in each investment in a pro-active manner. To do so, TPC has put in place a formal Portfolio Risk Management System (PRMS) to identify the portfolio risks, to manage and mitigate those risks and to ensure that the agency’s investments are geared to achieve the stated goals of benefits to Canada, including creation of jobs, leverage, sustainable development and repayments. Details on how TPC manages risk, and the progress made to date, are provided in Appendix A.

### **3.2 Portfolio Risk Management System**

Although the use of PRMS within TPC is at the early stages, both a scale and guidelines to risk rate investments have been developed and implemented. To strengthen the monitoring of TPC's portfolio, a comprehensive exercise is undertaken annually to assess estimated repayments and evaluate risk migration. A Risk Management Committee (RMC), consisting of senior management, has also been set up to oversee all key risk management issues and to ensure that the portfolio is moving toward meeting program objectives. The PRMS reflects TPC's commitment to its public accountability responsibilities and is being continually enhanced to ensure full compliance with guidelines from the Treasury Board Secretariat (TBS), the Auditor General and the government's Modern Comptrollership Initiative.

### **3.3 Risk-based Audit Framework**

The Risk-based Audit Framework (RBAF) explains how risk concepts are integrated into the strategies and approaches used for managing programs that are funded through transfer payments. RBAFs are a requirement of the TB Policy on Transfer Payments, which stipulates that "Departments must develop a risk-based audit framework for the audit of contributions. . . ." The RBAF provides:

- background and profile information on the transfer payment program including the key inherent risk areas (internal and external) that the program faces;
- an explicit understanding of the specific risks that may influence the achievement of the transfer payment program objectives;
- a description of existing measures and proposed incremental strategies for managing specific risks; and
- an explanation of monitoring, recipient auditing, internal auditing, and reporting practices and procedures.

TPC's Terms and Conditions commit the agency to adopt a risk-based approach to the selection of contributions for audit. Specifically, TPC conducts desk audits of all claims submitted by companies and field audits of selected investments based on risk factors. Also, the audit risk of each contribution agreement is assessed annually. During February 2001, TPC finalized the development of a framework to guide its work in the audit function (at that time, the framework was provided to TBS for information together with a submission revising the agency's Terms and Conditions). Subsequently, during July 2002 TBS published a *Risk-based Audit Framework*

*Guide* to assist managers in the preparation of RBAFs. While TPC has integrated the audit function into its risk management process, the agency must ensure that its current audit framework is fully aligned with the TBS guidelines for RBAFs. This work, which will be undertaken in conjunction with TPC's annual audit plan, will be completed during 2003-2004.

#### **4. TPC AND KEY GOVERNMENT PRIORITIES**

##### **4.1 The Innovation Strategy**

One of the basic challenges identified in the federal government's Innovation Strategy is improving Canada's knowledge performance. Improving knowledge performance means encouraging Canadian firms to create knowledge and bring ideas to market. It also means increasing R&D investment in Canada by all industry sectors. In that regard, TPC was established to fill a gap at the product development end of the innovation continuum. TPC fills this gap by investing strategically in industrial research and pre-competitive development projects that accelerate the development of innovative technologies and products, thereby helping to make innovation a reality in Canada.

One of the goals of the federal government's Innovation Strategy released on February 12, 2002, is to ensure that a growing number of firms benefit from the commercial application of knowledge. In addition, innovation is one of Industry Canada's strategic objectives with a key result of "Accelerated commercialization and adoption of innovative processes and products by Canadian organizations." Helping to commercialize knowledge is a function that TPC was created to fulfil; therefore, the agency will continue to play a leadership role within key segments of Canada's innovation continuum.

##### **4.2 Climate Change**

TPC is a key innovation tool that is well positioned to support Canada's climate change objectives through its investments with the private sector in the development of new technologies that support sustainable development and economic growth. In fact, working in partnership with the private sector and other government organizations, TPC has invested almost \$362 million in 27 projects that support Canada's climate change and sustainable development goals. Recent examples include Rolls Royce's high-efficiency, low-emission industrial gas turbine engine (project \$122.5 million; TPC \$30 million) and Westport Innovation's dual natural gas/diesel engine fuel system (project \$63 million; TPC \$18.9 million). Moreover, the agency

has a strategic presence in the development of more traditional environmental projects such as the world-leading clean water technology developed by Zenon Corporation (project \$30 million; TPC \$9.9 million). Additional information on TPC's support to climate change, including a detailed list of the agency's investments, is provided in Appendix B.

#### **4.3 The Kyoto Protocol**

In the Speech from the Throne on September 30, 2002, the government indicated that it will meet Canada's obligations under the Kyoto Protocol to reduce greenhouse gas (GHG) emissions over the next ten years. Subsequently, on December 17, 2002, Canada formally ratified the Kyoto Protocol. A key method to help achieve Kyoto targets is through the accelerated commercialization of technologies that address climate change. But an important issue identified during the Innovation Summit is that access to risk capital, which is often scarce, is essential to move from the research to the commercialization stage. Through the use of "patient" risk capital to promote technology innovation, TPC has proven to be an effective instrument in support of the commercialization process. This investment experience positions TPC to be a key instrument to help the government meet its commitments under the Kyoto Protocol.

#### **4.4 The Hydrogen Economy**

The hydrogen economy will be built on what many observers view as an inevitable transition from an economy powered by fossil fuels to one based on hydrogen. One pillar of this new economy will be the hydrogen fuel cell. In principle, a fuel cell operates like a battery. Unlike a battery, a fuel cell does not run down or require recharging. It will deliver energy in the form of electricity and heat as long as fuel is supplied continuously from outside the cell. Hydrogen is the preferred fuel source, as it makes up over 90 percent of the matter in the universe and is estimated at 0.9 percent of the Earth's mass. Hydrogen is mostly provided by water, but is found in numerous other substances such as natural gas, methanol and coal, and is present also in animal and vegetable matter.

Currently, fuel cells are being developed around the world for use in specialized portable and stationary applications, in everything from laptops to lighthouses. However, it may be a decade or more before full-scale commercial production of motor vehicles based on this technology is realized. As the use of fuel cells grows, the benefits to the environment in the form of greatly improved local air quality and more sustainable use of non-renewable energy resources, along with those related to climate change, are becoming increasingly evident. For this reason, the



*Climate Change Plan for Canada* acknowledges the tremendous long-term potential for reducing automotive-related GHG emissions in Canada offered by hydrogen-powered fuel cells. Key hydrogen-related investments have been made in recent years by TPC, for example, in firms such as Ballard Power Systems, Stuart Energy Systems and Dupont Canada.

## **5. REPAYMENT MANAGEMENT**

### **5.1 Public Policy Benefits**

The financial benefits (i.e., repayments through royalties, warrants, fixed amounts, etc.) accrued by TPC are, admittedly, essential for the government to recover the funds invested. But, it is appropriate to note that, in addition to financial repayments, TPC's investments derive a number of important benefits to both the Crown and Canadian society. In fact, TPC's real value is represented in the public policy benefits that derive from its investments (e.g., accelerating innovation, advancing Canada's KBE by increasing economic growth, jobs and wealth creation, contributing to climate change objectives and sustainable development, and other societal priorities such as health benefits, clean air, clean water, etc.). Understandably, TPC views all of its potential investments through the prism of public policy benefits. Thus, in judging TPC's results, the entirety of the benefits achieved, not solely the amount of repayments collected, must be considered.

### **5.2 A "Patient" Investor**

TPC's investments are "patient" in the sense that the financial return or repayment from its investment comes primarily in the form of a royalty on sales. As such, except for warrants and some exceptions in specific cases, TPC does not receive any financial benefit or return from an investment until the product in which the new technology is embodied is sold in the market. As the R&D work supported by TPC can take three to five years, with a further three to five years for the product to mature and penetrate the market, it will be quite sometime, perhaps as much as five to ten years, before any significant financial return is seen. Moreover, such long-term investments in R&D and innovation are by their very nature inherently risky. Since the program is only seven years old, it is not surprising, therefore, that TPC is only now beginning to see financial returns to its portfolio. However, as the program grows and its investments mature, repayments will increase significantly. Information on TPC's repayments is provided in Appendix C.

## **6. FINANCIAL FRAMEWORK**

### **6.1 Contribution Budget**

TPC's Cabinet approved funding level ramped up during its initial years of existence to the current level of \$294 million (\$6 million was reallocated as a result of the reference level review). The National Research Council (NRC) provides an incremental \$15 million to help fund the \$30 million allocation to the IRAP-TPC initiative, leaving \$279 million to fund TPC operations. Approximately \$9 million (excluding employee benefit plans) is allocated to program administration, leaving \$270 million available for the TPC contribution program. Under the current recycling of repayments regime, TPC can access its actual prior year contribution repayments via Supplementary Estimates up to and including fiscal year 2003-2004 (for repayments collected in 2002-2003). During fiscal year 2002-2003, TPC collected some \$19 million in repayable contributions, which will be accessed during 2003-2004. Additional details on TPC's financial framework for the period 2003-2004 to 2005-2006 inclusive, including both the contribution and operating budgets, are provided in Appendix D.

### **6.2 Operating Budget**

The operating budget includes all costs to administer, manage, deliver and monitor the program. When TPC obtained full Special Operating Agency (SOA) status, TB approved approximately 3 percent of the agency's total budget for program administration – currently at \$9 million before adjustments. At that time, the level of funding allocated for program administration was linked directly to TPC's budget and was adequate to launch the program. These resources were primarily directed at operations with an emphasis on doing the due diligence necessary to secure the appropriate high-risk investments needed to launch the agency. However, the resources for program administration identified at start-up could not have envisaged the requirements of a portfolio that would expand rapidly to over 500 investments valued at more than \$2 billion. As a consequence, TPC's current operating budget is inadequate to effectively manage a complex portfolio of high-value and high-risk investments. Therefore, TPC will be presenting a TB submission early in 2003-2004 seeking a vote transfer to increase its operating budget to a level commensurate with the size and complexity of the portfolio to be managed.

## **7. BUILDING RELATIONSHIPS**

### **7.1 Connecting, Consulting and Communicating**

While TPC is Canada's innovation instrument, the program must continue to evolve to become a more flexible and agile instrument of government policy. TPC must *connect* with its stakeholders and build partnerships and alliances that accelerate innovation. The Agency must continue to learn from others through a *consultation* plan involving key elements within both the public and private sectors. By strengthening its *communications and outreach* activities, including re-tooled messages, TPC must enhance Canadians' understanding of the program, including repayments, risk management and long term benefits. Also, as part of its efforts to accelerate innovation in Canada, TPC must develop an auxiliary marketing stream which is not merely a conduit for building relationships. This expansion of the Agency's efforts to build relationships will require additional resources -- an issue to be addressed early in 2003-2004. A summary of TPC's plan for building relationships during 2003-2004, including key messages, is provided in Appendix E.

## **8. HUMAN RESOURCES**

### **8.1 Industry Canada's People Management Plan**

Industry Canada's People Management Plan (PMP) is structured to create and sustain a vibrant and skilled work force committed to fulfilling the department's mandate. The PMP is a human resources (HR) strategy for all departmental employees, including the staff of TPC. As enunciated in the PMP, the department's HR performance goal is to renew, retain, recruit and represent the work force needed to provide the best possible service to Canadians. To attain this goal, Industry Canada is committed to a range of activities designed to become an Employer of Choice. As TPC is an agency of Industry Canada, its HR strategy and plans are in consonance with the department's PMP.

### **8.2 TPC's Human Resources Plan**

The department's PMP identifies one of the challenges ahead as "Integrating human resources planning into business planning at the sector/branch level." Within the federal government, Industry Canada is not alone in directly linking HR planning to business plans. For example, TBS includes "Human Resources -- Personnel needs now and in the future as well as training

requirements” among typical content for a Special Operating agency’s (SOA) business plan. Obviously, there is a need for TPC to respond to both departmental and TBS requirements by addressing HR issues in its business plan. A copy of TPC’s HR plan for 2003–2004 is provided at Appendix F.

## **9. PARTNERSHIPS AND ALLIANCES**

TPC has been successful in developing partnerships and alliances that fulfil specific operational and administrative needs. To lever maximum benefits from its investments, the agency actively pursues partnerships and alliances that strongly support innovation. Two examples of TPC’s partnerships and alliances that actively support SMEs and innovation are outlined below.

### **9.1 A Partnership to Support SMEs**

For the past five years, TPC has had a partnership with the National Research Council/Industrial Research Assistance Program (NRC/IRAP) for the delivery of the TPC program to SMEs. IRAP is the NRC’s technology and innovation assistance program for SMEs that is delivered through a network of Industrial Technology Advisors (ITAs) located in all regions. This partnership between the NRC/IRAP and TPC, which is referred to as the IRAP-TPC Initiative, was renewed for a five-year period commencing April 1, 2003. IRAP-TPC handles small innovative projects (valued at \$3 million or less), while projects valued at more than \$3 million are dealt with directly by TPC. TPC and IRAP contribute equally to program funding and repayments are recycled into the initiative. Additional details of this important partnership, including program delivery arrangements, are provided in Appendix G.

### **9.2 An Alliance to Support Regional Innovation**

TPC’s mandate is to invest in the commercialization of R&D in the aerospace and defence (A&D) sector and in environmental and enabling (E&E) technologies – activities that are, to a large extent, concentrated in firms in central Canada. TPC is also mandated to ensure that competitive and capable technology-based SMEs from all regions of the country are encouraged to participate and have fair access to the fund. In exercising its mandate, TPC is thus required to be sensitive to regional development concerns, despite the fact that TPC is not a regional development tool. (There are other programs in place for that purpose – the regional development agencies specifically target that objective.) TPC nevertheless recognizes that steps must be taken to ensure continuing full and fair access to the program for innovative firms throughout Canada.

TPC has entered into an alliance with Industry Canada's regional offices that not only strengthens the goal of full and fair access, but also supports regional innovation. Through this alliance, TPC is establishing and staffing positions in all regions of Canada with a mandate to promote TPC and other federal programs in support of innovation, in addition to the work done by the Regional Economic Development Agencies, to be a point of local contact for companies and other organizations in each region, to identify and refer regional projects for consideration, and to provide a regional point-of-view to the operational activities of TPC. This alliance will also directly benefit the SME community and those firms outside large urban areas. As witnessed by this alliance, TPC's support for the regional dimension of its mandate is sensitive to the government's long-term strategic approach to regional development.

## **10. NEW GRANTS AND CONTRIBUTIONS MANAGEMENT SYSTEM**

### **10.1 Purpose of the New System**

Industry Canada has acquired a new off-the-shelf Grants and Contributions (G&C) Management System (GCMS), which is being implemented in partnership with a major private sector firm. The purpose of the new system is to:

- address technical, performance and design issues that are crippling the current system;
- meet new government-wide standards for business requirements;
- address the advancement of technology with respect to e-commerce and Government On Line (GOL); and
- reduce existing departmental maintenance costs.

### **10.2 Implementing the New System**

All Industry Canada G&C programs will use the new system, which is complementary to, and fully interfaced with, the department's Integrated Financial and Material System (IFMS). As an integral part of Industry Canada, TPC will be migrating to the new system during 2003-2004. The new system will support delivery of G&C programs within Industry Canada, including TPC's contributions, by:

- tracking G&C projects through their life cycle;
- monitoring multi-year commitments; and
- managing repayments, receivables, recoveries and their forecasts.

As TPC's investments last over extended periods, involve multi-year commitments and result in repayments, the new system will help to strengthen the agency's financial management efforts.



**PART B: SUPPORTING INDUSTRY CANADA’S STRATEGIC OBJECTIVES**

TPC directly supports two of Industry Canada’s strategic objectives – Innovation and Investment.

**11. SUPPORTING INNOVATION**

**11.1 Improving Canada’s Innovation Performance**

<p><b>Industry Canada’s Strategic Objectives – 2003–2004 Report on Plans and Priorities</b></p>	<p><b>TPC Program Delivery Results</b></p>
<p>Innovation: Key Results</p> <p>Increased recognition of innovation as a critical success factor in all sectors</p> <p>Expanded knowledge base, especially in fields with good opportunities</p> <p>Accelerated commercialization and adoption of innovative processes and products by Canadian organizations</p> <p>Increased development and application of eco-efficient practices and technologies in Canada</p>	<p>Innovation: TPC Results</p> <p>TPC improves Canada’s innovation performance and accelerates the development and adoption of innovative technologies by investing in high-risk industrial research and pre-competitive development projects.</p> <p>TPC’s investments contribute to an expanded knowledge base and technological capabilities in key industry sectors: aerospace and defence, environmental technologies and enabling technologies (advanced manufacturing and processing technologies, advanced materials processes and applications, applications of biotechnology and applications of selected information technologies).</p> <p>TPC’s technology investment portfolio is aimed at making innovation a reality in Canada by providing patient capital and creating partnerships with large, medium and small businesses in all regions.</p>

**12. SUPPORTING INVESTMENT**

**12.1 Improving Canada's Position as a Preferred Location for Domestic and Foreign Investment**

<p align="center"><b>Industry Canada's Strategic Objectives – 2003–2004 Report on Plans and Priorities</b></p>	<p align="center"><b>TPC Program Delivery Results</b></p>
<p>Investment: Key Results</p> <p>Improved domestic and international investment climate</p> <p>Canada branded and recognized as an investment location of choice</p> <p>Increased attraction and retention of multinational investment in Canada</p> <p>Increased investment by SMEs and by Aboriginal business</p>	<p>Investment: TPC Results</p> <p>TPC supports Industry Canada's strategic objective of investment by leveraging domestic investment, attracting foreign direct investment (FDI) and supporting SMEs.</p> <p>As of March 31, 2003, TPC has achieved the following results:</p> <ul style="list-style-type: none"> <li>• On a portfolio basis, TPC's active investments total over \$2.3 billion in 537 projects, which are forecasted to leverage over \$9.5 billion in private sector investments.</li> <li>• TPC has supported seven projects that involved foreign direct investment (FDI). Total investment in these seven projects from all sources is almost \$1.4 billion.</li> <li>• TPC's portfolio includes investments with SMEs totalling over \$811 million (34.6 percent of funding) in 468 projects (87.2 percent of projects).</li> </ul>

## **PART C: OPERATIONS**

### **13. DELIVERING THE PROGRAM**

#### **13.1 Environmental Technologies**

##### *13.1.1 Industrial Development Strategy*

The demand for new environmental and energy technologies is affected by a variety of domestic and international market forces, societal issues and government initiatives. At the broadest level, increasing economic development, globalization and population growth continue to stress the Earth's ecological limits in critical areas such as deforestation, ozone depletion, loss of biodiversity, smog, contaminated water and climate change. Dynamic transformative technologies in the environmental and energy industries are seen as important means to address these issues.

TPC's Environmental Technologies Directorate encourages and supports the development and application of innovative technologies that:

- contribute to the achievement of sustainable development;
- offer cost efficiencies over traditional methods; and
- promise tangible environmental benefits to Canada.

The Environmental Technologies Directorate's industrial development strategy incorporates an approach that:

- targets investments addressing the government's environmental priorities of climate change, sustainable development, pollution prevention and clean water; investments in pollution abatement and remediation technologies are also considered;
- invests in eco-efficient technologies that offer environmental benefits while contributing to economic growth, productivity and job creation;
- supports energy efficiency and development of renewable and alternative sources of energy; and
- explores opportunities for partnering.

### *13.1.2 Delivering Environmental Technologies*

The approach adopted by TPC to implement the environmental technologies industrial development strategy includes promoting primarily those technologies that address key environmental issues relating to climate change, emissions of harmful substances, air and water quality, and sustainable development. The following activities will be carried out while being cognizant of overall program funding constraints:

- GHG emissions present a serious global problem as evidenced by the adoption of the Kyoto Protocol by the Conference of Parties to the United Nations Framework Convention on Climate Change (December 1997). GHG emissions continue to present significant challenges for industry. At the same time, meeting these challenges presents tremendous opportunities for the development of climate-friendly technologies such as:
  - fuel cell-based power generation for electricity production and transportation;
  - power generation based upon renewable energy sources such as photovoltaics, biomass, solar and wind power;
  - clean technologies for petroleum production and processing, papermaking, mining and smelting operations, and other industrial processes; and
  - transportation technologies involving alternative fuels (natural gas, ethanol, methanol, hydrogen), electric and hybrid electric vehicles;
- emphasizing eco-efficient and clean production technologies that embody the principles of pollution prevention, waste reduction, and sustainable development;
- supporting both industrial research and pre-competitive development with the latter including prototypes and initial demonstration or pilot projects;
- partnering with organizations such as Technology Early Action Measures (TEAM) and the Climate Change Action Fund (CCAF) on joint delivery of GHG reduction technologies; and
- promoting the TPC program through Industry Canada's regional offices and other government departments and agencies as well as industry associations and financial institutions.

## **13.2 Enabling Technologies**

Under enabling technologies, TPC is mandated to support:

- biotechnology;
- information and communication technologies (ICT);
- advanced manufacturing and processing technologies (AMT); and
- advanced materials processes and applications.

Therefore, separate industrial development and delivery strategies are provided below for each of these sectors.

### *13.2.1 Industrial Development Strategies*

**Biotechnology:** The vision for Canada's biotechnology sector is to enhance the quality of life of Canadians in terms of health, safety, the environment and social and economic development by positioning Canada as a responsible world leader in biotechnology. Broadly defined, Canadian biotechnology is the applied use of living organisms or their components to make or modify products, to improve plants or animals and to develop micro-organisms for specific uses.

The major driver of innovation and expansion in biotechnology in recent decades has been the discovery of the structure of DNA and the further development and growth of this knowledge. Currently, over half of Canada's biotechnology companies use DNA-based technologies and the research community is heavily oriented toward work in genomics and proteomics.

Ever-increasing demand for biotechnology products and services is creating significant opportunities for Canadian biotechnology companies who can build on the advanced knowledge base generated by the research community. This demand includes the development of platform technologies with multiple applications is a key growth area, with the greatest expansion anticipated in genomics, proteomics, biosensors and bioinformatics. Canada offers major opportunities for the development and establishment of new biotechnology companies by both Canadian and foreign investors while providing existing firms with support to conduct R&D in key growth areas.

In absolute numbers, Canada ranks second in the world, after the United States, in terms of the number of companies using biotechnology. Canada has 375 companies located across the

country. More than 75 percent are small but rapidly growing companies with 50 or fewer employees. One-quarter of the companies are publicly traded. With almost 12,000 employees in 2001, employment is forecast to grow by 10 percent per year for the sector; however, the challenge remains to find employees with scientific and other pertinent qualifications.

Despite the tremendous economic potential of this emerging sector, biotechnology companies identify access to capital as the most significant challenge they face in maintaining leadership in their respective niche areas. In pushing the boundaries of biotechnology, TPC's role is to supplement private sector funding in support of dynamic companies that tap into and augment Canada's technology base.

In an environment of heavy demand for funds, TPC's strategy aims to give highest priority to those companies with the most potential for growth resulting in greater benefits to Canada. TPC will target the faster-growing SMEs as well as established Canadian firms that demonstrate the potential for full integration. Companies operating in health-related therapeutics and diagnostics offer huge market potential. These companies constitute a major emerging sector of increasing maturity, which can be expected to generate significant economic growth. Albeit a much smaller number, several companies are engaged in developing biotechnology applications for resource sectors, thus helping these sectors to remain major contributors to Canada's GDP.

TPC's biotechnology sector strategy is to:

- assist promising SMEs to grow and hence strengthen their position in the marketplace;
- support established Canadian companies to develop fully integrated capabilities, from research to production;
- encourage strategic foreign direct investment in biotechnology to fill gaps or enhance Canadian capabilities;
- help companies in emerging sectors to move up the R&D value chain; and
- ensure that key platform technologies such as genomics and bioinformatics, which are essential to sector growth, are supported.

**Information and Communication Technologies (ICT):** Canada has emerged as a leader in many parts of the ICT sector and continues to compete for resources in the crucial areas of investment/capital, knowledge workers and entrepreneurs. Time-to-market and first-mover advantage are key to success in this sector. Talent and ideas, rather than plant and equipment, are the assets driving company valuations. To leverage resources, TPC focusses on technologies that



power growth and coincide with Canada's ICT strengths and capabilities in an effort to maximize the economic impact of its investments.

The Internet continues to present tremendous business opportunities on which Canada must aggressively capitalize if the country is to maintain its significant role in the development of ICT products and services. As the leading medium driving the convergence of technologies in a KBE, the Internet continues to be a powerful change agent. The shift in business toward the new, "networked" economy continues to be propelled by the Internet and its effect on the nature, scope and direction of the ICT industry.

Businesses in the ICT sector are responsible for most of the technical infrastructure necessary for the functioning of the new economy. What makes ICT sectors even more important, though, is their diffusion throughout the economy – their uptake by businesses in industries across the economy. In fact, the Canadian economy is more ICT intensive than the average for OECD countries when measured in terms of employment and R&D expenditures.

TPC's ICT sector strategy supports Canadian companies and strives to augment future private sector efforts to build a strong, world-class Canadian ICT industry by increasing Canada's participation in the new 'networked' economy of the twenty-first century. Innovative connectivity and broadband access to the Internet, both wired and wireless, will continue to be the primary focus of TPC investments in ICT, as will core technology development in areas such as photonics, microelectronics, e-commerce applications and software development.

**Advanced Manufacturing and Processing Technologies (AMT)** are key to creating significant advances in discrete and process oriented manufacturing, to increase productivity and to decrease materials and energy intensity in process and products. Synergies between R&D providers, materials providers, equipment suppliers and aggressive AMT users specifying new process requirements are essential to successful technology development. The AMT industry strategy is to encourage development and use of new, advanced technologies by directing support to companies with viable growth strategies and potential, which includes:

- developing AMT equipment suppliers that are product-oriented, growth firms;
- developing AMT areas that will impact the competitiveness of an industry sector or geographic cluster of firms;
- assisting AMT suppliers to penetrate the resource and processing sectors;
- developing AMT producer–user synergies; and

- fostering the acquisition of new technologies from abroad in a way that is consistent with our objectives for the diffusion of technology in Canada.

**Advanced Materials Processes and Applications:** Canada is a world-scale producer of commodity materials, but must move into the production and application of advanced materials and processes to meet the challenges of the new millennium. Advanced materials technologies are cross-sectoral and enabling in nature and encouragement of their use in growth industry sectors such as aerospace and electronics is imperative in order to drive the development of new products and markets. The advanced materials strategy is to focus support for development in:

- areas where there are existing Canadian technological strengths such as metal powders, high-purity metals, ceramics specialties, polymer specialties and composites;
- other product areas not yet developed in Canada where there are significant growth opportunities, particularly where innovative materials and processes can complement the development of new products; and
- materials-related processing technologies in potential new areas with broad impact, including nanotechnology and recyclability.

### *13.2.2 Delivering Enabling Technologies*

One pillar of TPC's investment strategy consists of directing a portion of its contribution budget in innovative enabling technologies with the potential to generate economic momentum. The objective is to accelerate the development of strategic technologies through innovative projects that have high potential for strong secondary enabling effects. This includes platform technologies that provide a base for the development of innovative applications or technologies that can increase productivity across Canadian industry. TPC will invest in enabling projects that lead to new or enhanced technological capabilities that increase innovation and improve Canadian competitiveness leading to a stronger economy.

## **13.3 Aerospace and Defence**

### *13.3.1 Industrial Development Strategy*

Canada's A&D industries are key areas for investment by TPC. A&D industries are among Canada's most knowledge-intensive sectors, accounting for 15 percent of R&D performed by all manufacturing industries. More than 80,000 Canadians – many in highly paid, highly qualified

scientific and engineering-related positions – are employed by over 700 A&D firms. Investments by TPC leverage increased innovation spending in Canada's A&D industries, thereby helping this vital part of the Canadian economy maintain and expand its position of technological excellence, and contribute to the country's well-being.

TPC's A&D component encourages and supports the development and application of technologies essential to advancement of these industries. Specifically, TPC supports projects that sustain and expand the technological capacity and capability of A&D industries. Support is also available for defence conversion projects aimed at reducing the dependency of enterprises on military contracts. The majority of this support goes to about 20 to 30 firms that undertake the vast majority of the R&D in the sector. Special emphasis is placed on projects in the areas of industrial research and pre-competitive development, which are considered to be key to the continuing contribution of A&D industries to the achievement of Canada's national strategic objectives.

The industrial development strategy adopted by TPC's A&D component for the planning period is to support projects with key firms in the sector involving specific technologies that are considered essential to the future well-being of A&D industries. Using a wide range of sources, TPC, in cooperation with the department's Industry Sector, has identified a series of critical A&D technology areas. These technologies, which will be the focus of TPC support during the planning period, are comprehensive, correlate with existing Canadian and U.S. technology definitions and address the specific needs and characteristics of the Canadian A&D sector (see paragraph 13.3.2 below for additional information on these technologies).

### *13.3.2 Delivering Aerospace and Defence*

In delivering its A&D component, TPC will invest in industrial research and pre-competitive development projects that strengthen the technological capacity of Canadian A&D industries. The agency will focus its attention on strategic investment opportunities that will help to solidify the basic capabilities of the Canadian A&D sector. Special emphasis will be placed on making contributions in the following Canadian A&D critical technology areas:

- advanced industrial methods and practices;
- design and analysis technologies;
- training, simulation and modelling;
- aircraft systems and systems integration;

- advanced manufacturing technologies;
- maintenance, repair and overhaul technologies; and
- space systems, including communications.

Accelerated development in these critical technology areas is essential to continued economic growth and the creation of jobs and wealth in Canada's A&D sector. TPC's A&D Directorate will also consider projects related to defence conversion, the Defence Development Sharing Arrangement, footloose investments and projects (exceeding \$3 million) from SMEs throughout Canada.

TPC is also contributing to Canada's commitment under the Joint Strike Fighter program. Canada, through the Department of National Defence has signed on with the United States as a partner in the System Development and Demonstration phase of the initiative. As part of Canada's commitment, TPC has earmarked up to \$125 million to Canadian aerospace firms participating in the R&D effort on the new aircraft. It is anticipated that this early involvement will lead to industrial opportunities for Canadian firms during the follow-on production phase.

To assist small A&D firms in meeting the increasingly stringent requirements of larger aerospace firms related to quality programs, business processes, design and planning systems, data processing and manufacturing processes, TPC has initiated the Supplier Development Initiative. This three-year, \$30-million pilot program was put in place to assist smaller firms to implement the systems and processes necessary for them to continue to serve their clients in the aerospace industry.

#### **14. MEASURING PROGRAM RESULTS**

To ensure that TPC's assessment of planned results is comprehensive, the agency employs a multi-faceted approach utilizing audit, evaluation, service standards and performance measures. Key activities for each of the methods of assessment employed by TPC are identified below.

## **14.1 Audit**

Audits of TPC's investments are risk based and involve two types, namely:

- **Desk Audits:** An audit procedure performed internally by TPC as part of the claims review/account verification process before payment is made (TPC conducts desk audits of all claims submitted by companies).
- **Field Audits:** An audit examination of accounts and records on-site at a company's corporate offices (TPC conducts field audits of selected investments based on risk factors).

Similar to other government organizations, TPC is subject to audit by the Office of the Auditor General as well as internal departmental audit. In 1998–1999, the Office of the Auditor General conducted an audit of TPC with a follow-up during 2001–2002. Also, an internal departmental audit of the program was undertaken during 2002–2003, and TPC has been tasked to report the findings to TB by the end of January 2004.

## **14.2 Evaluation**

The responsibility for scheduling and conducting formal evaluations of TPC's operations rests with the Audit and Evaluation Branch of Industry Canada. An interim evaluation encompassing TPC's initial six years of operations (1996–1997 to 2001–2002 inclusive) was conducted during 2002–2003, and TPC has been tasked to report the findings to TB by the end of January 2004.

## **14.3 Service Standards**

Service standards provide TPC with a practical way to manage its performance and help to shape the expectations that clients have of the services provided by the agency. Key client-oriented service standards established by TPC, including assigned time frames, are identified below:

- Within two weeks of receiving a complete Investment Outline, the company will be advised whether or not the proposed project appears to meet TPC's eligibility and assessment criteria.
- If the project does appear to meet TPC's eligibility and assessment criteria, further discussions will be arranged with the company. Within a few weeks of conducting such

discussions, the company will be advised whether or not it should proceed to the next step in the process and submit a detailed Investment Proposal.

- Within three to six months of receiving a complete Investment Proposal, the company will be provided with a final decision on the project. (The actual time frame to render a final decision on the project will depend on the scope, size and complexity of the project, availability of data, access to company personnel, etc.)
- Within 30 calendar days from the date of receipt of a legitimate claim, payment will be issued to the company.

#### **14.4 Performance Measures**

TPC's planned investment results will be measured against key performance indicators, which are:

- based on guiding principles for ensuring TPC's effective contribution to government initiatives identified in the agency's SOA framework document approved by TB; and
- grouped under categories closely linked to the impact/effect of TPC's operations.

Details on TPC's performance measures, including guiding principles, groupings, indicators and targets for 2003-2004, are provided in Appendix H.

#### **14.5 Determining the Impact on Canadians**

As stated above, TPC aggressively monitors and measures its services and investments through a complementary system of audit, evaluation, service standards and performance measures. This multi-faceted approach, which deals with measuring program results at the investment level, has been developed and refined during TPC's initial seven years of operations. Having implemented and confirmed a viable method of measuring results at the investment level, TPC must now address the issue of tracking and reporting on program results to identify the impact of its investments on the wealth and well-being of Canadians. These results are closely linked to that part of TPC's mandate related to increasing economic growth and wealth creation. Determining the impact of its portfolio on Canadians will be a major issue that TPC will confront during 2003-2004. In fact, by the end of January 2004, TPC is tasked to report to TB on how it proposes to respond to this challenge.

## 14.6 Results-based Management and Accountability Framework

The Results-based Management and Accountability Framework (RMAF) serves as a blueprint for managers to help them focus on measuring and reporting on outcomes throughout the life cycle of a policy, program or initiative. RMAFs are a requirement of the Treasury Board Policy on Transfer Payments and are also called for under the TB Evaluation Policy whenever they make sense for the purpose of measuring and reporting on results. RMAFs are intended to help managers:

- describe clear roles and responsibilities for the main partners involved in delivering the policy, program or initiative – a **sound governance structure**;
- ensure clear and logical design that ties resources to expected outcomes – a **results-based logic model** that shows a logical sequence of activities, outputs and a chain of outcomes for the policy, program or initiative;
- determine appropriate performance measures and a **sound performance measurement strategy** that allows managers to track progress, measure outcomes, support subsequent evaluation work, learn and make adjustments to improve on an ongoing basis;
- set out any **evaluation work** that is expected to be done over the life cycle of a policy, program or initiative; and
- ensure **adequate reporting** on outcomes.

Early in 2001–2002, TPC revised its 1996 program evaluation framework. This document, along with proposed changes, provided the foundation/basis to finalize an Evaluation and Accountability Framework in July 2001 in preparation for an interim (i.e., formative) evaluation study. Shortly after TPC's framework was completed, TBS, during August 2001, published a *Guide for the Development of Results-based Management and Accountability Frameworks*. Currently, TPC's framework is being used to guide the completion of an interim evaluation of the program – one of the purposes of an RMAF. The interim evaluation, which will be completed by the summer of 2003, will address relevance/need for the program; program design/implementation/delivery/reach, progress/success, and lessons learned to date. Once the report on the interim evaluation is received, TPC intends to ensure that the current framework is aligned with the TBS guidelines for RMAFs. This work, which will result in a fully aligned and compliant RMAF, will be completed during the fall of 2003.

## **PART D: WATCHING THE PORTFOLIO**

### **15. THE AEROSPACE INDUSTRY**

#### **15.1 Status**

After many years of robust growth in commercial air traffic and new aircraft sales through the late 1990s, aviation activity began to slow at the end of 2000 and early 2001. This coincided to some degree with a general economic slowdown being experienced globally. Around that time, it also became apparent that there was an overcapacity in the airline industry brought about by excessive expansion in previous years. The events of September 11, 2001, were clearly a major blow to the already deteriorating prospects for the aerospace industry. The immediate impact was an abrupt drop in passenger traffic worldwide. Although some of that traffic has recovered, mainly in Europe and Asia, worldwide travel and load factors are still down from previous levels.

The financial situation of the airlines has deteriorated significantly over the past two years. Airlines worldwide lost billions in 2001. Numerous bankruptcies have occurred and further consolidation can be expected, particularly in the United States (e.g., US Airways, United Airlines). As of August 2002, there were 2,163 wide-body, narrow-body and regional jets in storage, approximately 800 more than there were a year earlier. At present, larger airlines are having the most difficulty, with discount and regional carriers (e.g., Southwest, Westjet) faring better. A financial recovery in airline profitability is not expected before late 2004 at the earliest.

#### **15.2 Recovery**

With the U.S. and world economies struggling, demand for new business aircraft has fallen off dramatically. No expectation of a turnaround in sales is anticipated prior to an upturn in overall corporate profitability, particularly in the primary U.S. market. Other factors impeding a turnaround at this time include the new security measures recently introduced in the United States and the run-up of fuel prices due to the conflict in Iraq. The general view at this time is that it will be at least two years before a significant upturn in passenger traffic takes place that will help airlines get back on their feet. Only when this occurs will significant new orders for commercial and business aircraft begin to develop. This assumes no major economic events such as global recession and broadening world conflicts, or further unexpected shocks such as took place on September 11, 2001. In the intervening period, it can be expected that overall R&D



efforts will be scaled back to reflect the prevailing commercial uncertainties and slower market uptake of new products.

## **16. INFORMATION AND COMMUNICATIONS TECHNOLOGIES**

### **16.1 Status**

The information and communications technologies (ICT) industry has gone through a revolution in terms of technological innovation and productivity improvement. Consider that computing power has doubled every 18 months for 30 years, memory capacity has doubled every 12 months for 15 years, and performance improvement (capacity to deliver information) has doubled every 24 months for 50 years. It is therefore not surprising that a few years ago, high-tech computing and telecommunications companies were on the crest of an economic wave. Mobile phones had hit the mass market and sales of computing equipment were buoyant, driven in large part by rapidly increasing Internet use. Investors rushed to embrace technology and dot-coms, and the Nasdaq high-tech stock market soared to unprecedented levels.

In 2001, the bubble burst in spectacular fashion. The Nasdaq declined significantly as projections by high-tech firms looked seriously misplaced. Demand for mobile phones declined. Over-investment in the infrastructure of the Internet – optical-fibre networks and the equipment needed to run them – left telecom companies with a glut of unused technology. Computing sales stagnated and the chip market became much more competitive. Coming on the heels of the dot-com bubble-and-burst and the deflated expectations of the e-commerce boom, broadband Internet failed to generate a new surge in mass-market demands for ICT goods and services. Not only has ICT been unable to transform the retail and wholesale sectors, it appears to be unable to transform even the delivery of its own information products. These failures, combined with economic fallout from the terrorist attacks in New York and Washington, as well as continuing concerns over the economy, make the outlook for ICT appear extremely gloomy for the near future.

### **16.2 Recovery**

There is widespread agreement that there will be a recovery in ICT, but not when it will start. It could be up to two years before a full recovery takes hold. Once the recovery begins it is expected to be sustained, barring adverse shocks. ICT investment should expand again with a moderation of growth potential in North America, reflecting tight labour markets. The share of

ICT investment will continue to rise, although perhaps somewhat less rapidly. Software will remain the more robust component, with declining prices and improved technologies pushing downward on the shares of computers and telecommunications equipment. The successful search for new customers, new applications and new markets will be a necessity for the recovery and sustained performance of the ICT sector.

## **17. IMPACT ON TPC'S PORTFOLIO**

### **17.1 Aerospace and ICT Investments**

As of March 31, 2003, TPC, including IRAP-TPC projects with SMEs, has the following cumulative investments in the aerospace industry and ICT:

- Aerospace industry: Over \$1.3 billion in 122 aerospace projects.
- ICT: Over \$326 million in 214 ICT projects.

### **17.2 Impact on Investments**

A number of early aerospace and ICT investments (1996–2000), where repayments were to start in the 2002–2005 time frame, will be negatively impacted by the current state of both industries (as a downturn of this severity and probable duration had not been forecasted). Some investments expected to begin repayment in the medium term (three to five years from now) may be negatively affected (depending upon whether the rebound has begun), but likely to a somewhat lesser degree. Newer projects negotiated recently or over the near term will be based on lower-level forecasts, and therefore the planning assumptions should reflect the current situation. Similar to other industries, aerospace and ICT are subject to periodic cyclical downturns. Therefore, any long repayment period will naturally have to weather one or more of these normal up and down periods of the business cycle. Monitoring the aerospace and ICT industries are examples of how TPC carefully watches its portfolio.

## **PART E: SPECIAL DELIVERABLES**

### **18. OBJECTIVES**

#### **18.1 Long-term Program Objectives<sup>3</sup>**

The long-term program objectives established for TPC provide that investments will contribute to:

- increasing economic growth and creating jobs and wealth;
- supporting sustainable development;
- maintaining and building the industrial technology and skill base essential to a knowledge-based economy;
- encouraging the development of SMEs in all regions of Canada;
- encouraging private sector investment;
- managing the contributions so that all repayments are recycled into TPC, allowing potential for future growth;
- managing the sharing ratios on TPC contributions, with a target of an average TPC sharing ratio of no more than 33 percent (with typical project sharing ratios between 25 percent and 30 percent); and
- taking an investment approach through sharing in rewards as well as in risks.

#### **18.2 Objectives for the Planning Period**

TPC's SOA framework document stipulates that specific objectives to be achieved over identified planning periods will be published in successive editions of the agency's business plan. Accordingly, over the planning horizon, TPC will address the following key objectives.

##### *18.2.1 Objective 1: Public Relations, Marketing and Communications*

TPC's public relations, marketing and communications strategy must counter some negative perceptions of the agency in a proactive and timely manner. TPC's public image must be improved by focussing on the tangible and positive outcomes to be derived from the program's

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<sup>3</sup> *Source:* TPC's Special Operating Agency (SOA) Framework Document approved by TB.

investments. The agency must be viewed as a prudent financial manager whose investments not only reap direct economic benefits (jobs and growth), but also positively impact the wealth, well-being and quality of life of Canadians. Also, the high degree of interest in TPC's activities is evident through Access to Information and Privacy (ATIP) requests received by the agency. A mechanism must be put in-place to disperse information more broadly and pre-empt ATIP requests while bearing in mind the need to respect commercial confidentiality.

#### *18.2.2 Objective 2: Responsible Financial Management*

TPC must strengthen its cash management processes to continue to demonstrate that it is a responsible financial manager. Through a disciplined process, which includes quarterly cash reviews, TPC must effectively plan for carry-forwards that are essential for the prudent management of its multi-year investments. By establishing and adhering to cashflow targets, TPC must negate the possibility of year-end lapses beyond its authorized carry-over limit. Moreover, TPC's cash management processes must be in consonance with the agency's PRMS, which incorporates the key elements of integrated risk management as outlined in the Modern Comptrollership Initiative.

#### *18.2.3 Objective 3: Resourcing for Today and Tomorrow*

TPC's rapidly expanding portfolio has necessitated that a comprehensive restructuring of the agency be undertaken. But additional resources are needed to support this restructuring and ensure that appropriate checks and balances are in place to manage TPC's high-profile, high-value portfolio. While a number of actions must be undertaken related to resources, two main activities are:

- approval for an increase to TPC's operating budget must be sought from TB; and
- an emphasis must be placed on staffing to obtain fully qualified and skilled personnel in a timely manner.

#### *18.2.4 Objective 4: Support to Key Government Priorities*

TPC has proven to be a flexible tool in addressing unplanned, large and sensitive issues related to maintaining, growing and developing Canadian industrial capabilities and other public policy objectives. TPC must ensure that it maintains its flexibility and ability to react to, and fully support, the critical policy objectives and priorities of the government's agenda. On the

immediate horizon, TPC must ensure it is well positioned to continue strong program support to advancing innovation, supporting climate change, targeting the long-term outcome of a hydrogen economy, and helping to meet Canada's obligations under the Kyoto Protocol.

## **19. IMPLEMENTING OBJECTIVES**

### **19.1 Key Activities and Deliverables**

TPC's objectives for the planning period were analysed carefully to identify key activities that are critical to implementation. The analysis was then extended to each key activity to determine specific deliverables and milestones. In addition, methods to measure or indicate the effectiveness of deliverables as well as individuals to champion the process were also identified. All of this detailed information on TPC's special deliverables for 2003-2004 is provided in Appendix I. While TPC must continue to manage its ongoing operations, and address special requirements that arise from time to time, completion of the key activities in Appendix I is essential to successfully confront the agency's main challenges during 2003-2004.

## **20. MEASURING OBJECTIVES**

### **20.1 Responsibilities**

The following division of responsibility pertains to objectives established for 2003-2004:

- Champions are identified for each objective and are responsible for all aspects of implementation, including the identification of resources, producing deliverables and meeting key milestone dates.
- The Strategic Planning Group, on behalf of the Executive Director, will monitor the overall progress of implementing the business plan, including the attainment of objectives.
- Champions and Strategic Planning both have a responsibility to advise the Executive Director when a milestone date and/or deliverable will not be met.

## **20.2 Accountability**

The following process forms the basis of accountability for the 2003–2004 objectives identified in this business plan:

- The business plan forms the basis of performance agreements between:
  - the Associate Deputy Minister and the Executive Director of TPC; and
  - the Executive Director and each member of the TPC Management Team.
- At the end of each quarter of 2003–2004, the Executive Director will meet separately with members of the TPC Management Team to confirm progress made on implementing those objectives for which they are individually responsible.
- The Director, Strategic Planning is responsible for scheduling quarterly reviews, recording the results and advising pertinent individuals of decisions taken.



## **APPENDIXES**

- A – TPC and Risk Management
- B – TPC and Climate Change
- C – Repayment Management
- D – Financial Framework (2003–2004 to 2005–2006 Inclusive)
- E – Building Relationships
- F – Human Resources Plan
- G – The IRAP-TPC Initiative
- H – Performance Measures
- I – Business Plan Priorities 2003–2004



**TPC AND RISK MANAGEMENT**

**BACKGROUND**

There is a growing appreciation within government of the need to strengthen risk management practices and to develop a more strategic and corporate-wide focus. An essential element of a risk-smart environment is to ensure that the workplace has the capacity and tools to be innovative while recognizing and respecting the need to be prudent in protecting the public interest and maintaining public trust. With that in mind, TBS has announced that departments will be expected to develop a framework for Integrated Risk Management (IRM).

**WHAT IS RISK MANAGEMENT WITHIN GOVERNMENT?**

Simply put, risk refers to the likelihood of an adverse future event and its consequences. The focus within the government is on IRM covering all aspects of program delivery. IRM is a top-down approach based on, and supportive of, organizational strategy that is focussed on new ways to manage risks of highest importance to management. The strategy ensures that such risks are identified, their impact assessed on a timely basis and measures taken to manage or mitigate these risks so that program objectives are met. Risk management is a logical step-by-step process to protect, and consequently minimize risks to, the government's property, interests and employees. Risk includes the chance of damage to, or loss of, government property, and the chance of incurring second- or third-party liability to non-government entities. The saying "forewarned is forearmed" is an apt description of the management of risk. In the broadest sense, effective risk management ensures the continuity of government operations, including maintaining services to, and protecting the interests of, the Canadian public. As all manner of risks are present throughout government operations, successful delivery of a program is contingent upon effective and cohesive management of those risks.

**TPC'S PORTFOLIO RISK MANAGEMENT SYSTEM (PRMS)**

Elements of risk management have been utilized by TPC from its inception. For example, detailed risk assessments are undertaken at the project level prior to an investment decision

being rendered. Notwithstanding TPC's early emphasis on risk management, both increased media attention and concomitant public scrutiny of the agency's performance have demonstrated the need for enhanced transparency and accountability. Consequently, TPC has embarked on a more formal risk management practice by setting up a dedicated risk management team. The focus of the risk management team is to systematically and holistically address all levels of risk by developing a Portfolio Risk Management System (PRMS) that migrates toward best practices over time. TPC's PRMS consists of:

- tools and techniques such as the scale and guidelines used to rate risks at both the individual investment and portfolio levels;
- procedures and tools to identify, assess and address risks at all levels of the program – strategic, operational and project;
- policies and procedures on risk management that ensure that the portfolio is being steered toward its stated objectives of optimizing risks and returns through repayments for the continued growth of the program;
- the Chief Risk Officer as risk champion; and
- the Risk Management Committee (RMC) performing an oversight role.

TPC's PRMS will eventually move in the direction of integrated risk management as outlined in the Modern Comptrollership Initiative as well as Industry Canada's attributes of a well run contribution program. At present, the immediate priority has been to develop and implement policies and procedures to address risks at the project level. These policies, procedures and tools have been successfully implemented with encouraging results. Going forward, the goal of risk management practice at TPC is to develop policies, procedures and tools to identify, assess and address risks in a holistic manner at all three levels indicated below:

- **Strategic Risks:** These risks are usually the responsibility of senior management (Director General and above). Typically, strategic risks involve issues such as the program's reputation (e.g., impact of negative media and public scrutiny on TPC's performance, risk of incorrect perception by stakeholders of TPC's role and program achievements to date, etc.).
- **Operational Risks:** These risks are the responsibility of managers or directors. Risks at the operational level include performance of a particular directorate (e.g., number of projects funded, turn-around time, amount of dollars lapsed, performance of investments in terms of repayments and other benefits to Canada, etc.) and monitoring risks (e.g., Do the procedures and policies for monitoring claims and repayments reflect risk

management principles and practices? Are the management information system / business rules for maintenance of a data warehouse comprehensive? Are HR risks considered? etc.).

- **Project Risks:** These risks are the responsibility of Investment Officers and are related to specific projects. These are the risks currently assessed by TPC's PRMS.

The following principles guide the operation of TPC's PRMS:

- A risk assessment is performed initially during project approval as part of due diligence.
- A risk assessment update is performed at least annually for each investment and more frequently for projects where significant risks or events are identified.
- The Investment Decision Document and related contribution agreement are recognized as the initial sources of information upon which risk assessments are based.
- Annual risk assessment updates build upon initial risk assessments conducted during project approval and previous annual risk assessments by taking into consideration current events and changes in the environment. The frequency and the timing of the rating update are left to the best judgment and discretion of the Director and Officer of the Operational Directorate or Portfolio Administration, as the case may be.
- Risk assessment updates are completed within one month of the annual project review meeting or other follow-up occurrences, as required throughout the year.
- The results of individual project risk assessments form the basis of ongoing analysis and reporting on the portfolio as a whole.
- The terms, reporting requirements and other pertinent information in the contribution agreement, are used as the cornerstone for further analysis of action required by management with respect to results of the risk assessment.

#### **PROGRESS TO DATE**

TPC's risk management team is engaged in identifying risks at all three levels, bringing these risks to the attention of management through the RMC and recommending policies, procedures, strategies and tools to manage and mitigate these risks. Significant progress has been made to date, including:

- development of a portfolio risk management framework that lays down a road map for the establishment and evolution of risk management practice at TPC;

- implementation of several elements of the risk management framework (e.g., the governance structure established for oversight purposes is now functional as evidenced by RMC meetings held throughout 2002–2003 to address key risk management issues);
- development and implementation a risk rating scale along with detailed guidelines for risk rating and projecting repayments. (This tool addresses project level risks and, to some extent, aids in calibrating risks at the portfolio level. The computerized version of the risk rating scale was rolled out in 2002–2003. A workshop was conducted on March 21, 2002, to train officers on the use of the risk rating scale and the accompanying guidelines.);
- identification and resolution of deficiencies in the risk management database and the computerized version of the risk rating scale;
- improvements were made to the risk rating scale and guidelines and the detailed guidelines were domiciled on TPC's intranet;
- development and provision of ongoing reports to senior management for facilitating risk rating updates;
- development and presentation, for the first time, of portfolio-level results from the risk rating exercise to RMC and Industry Canada's Programs and Services Board;
- enhancement of the Investment Decision Document to incorporate, and clearly delineate, repayment risk.
- establishment of a standing offer to facilitate future work in risk management;
- submission of a joint proposal with the Canadian International Development Agency seeking TBS funding to develop a formal risk policy; and
- development and maintenance of ongoing liaison with TBS as well as the Comptroller's Branch, who are responsible for implementation of the government's Modern Comptrollership Initiative within Industry Canada.

## **THE WAY AHEAD**

Some of the steps planned by TPC to consolidate risk management of its portfolio of investments include:

- establishing a fully functional risk management database to generate periodic risk management reports;
- developing a corporate risk policy that will address key issues (e.g., asset diversification, risk-based pricing, risk mitigation strategies including repayment structures tied to the level of risks);

- emphasizing the completion of risk ratings according to the new guidelines to facilitate meaningful analysis and comparison;
- developing policies (e.g., policies and procedures for monitoring claims and repayments collection reflecting risk management practices, business rules for classifying, recording and reporting financial data, etc.); procedures and tools to address strategic and operational risks (e.g., Risk-based Audit Framework as a tool) that will minimize operational risks associated with program delivery;
- emphasizing portfolio valuation; and
- continuing to training officers and management to enhance their awareness and knowledge base of risk management practices in a manner that ensures that TPC moves toward best practices over time.

#### **TRANSLATING PRMS BENEFITS INTO PROGRAM DELIVERY**

TPC uses two main tools to ensure that the benefits of PRMS impact on day-to-day program operations, namely:

- **Risk Ratings:** Risk ratings are used as an important criteria while recommending and making investment decisions.
- **Risk-based Audit Framework (RBAF):** RBAFs are risk driven by definition. Various risk triggers, and consequent monitoring guidelines, are built into the framework based on the level of risk (e.g., project review frequency, factors that should trigger a review, reporting frequency, etc.).

TPC's risk rating process and RBAF provide an early warning system through the discipline of quarterly monitoring reports to RMC on all high-risk projects in the agency's portfolio. In 2003–2004, a review of the existing RBAF will be undertaken and an action plan will be compiled for its full implementation.



**TPC AND CLIMATE CHANGE**

**THE PROBLEM**

The international scientific community has concluded that there is compelling evidence that human activity, particularly activities associated with energy use and deforestation, is accelerating the concentration of greenhouse gases (GHGs) in our atmosphere. There is general agreement that the global community faces the likelihood of increases in the Earth's average surface temperature, with serious implications for global food and freshwater supplies, as well as many other implications.

Canadians are already feeling the effects of climate change in the form of:

- increasing number and intensity of heat waves and related health problems;
- declining water levels in the Great Lakes;
- changes in fish migration and melting of the polar ice cap;
- insect infestation in British Columbia's forests;
- hotter summers and high levels of smog in major urban centres; and
- more extreme weather events such as droughts on the prairies, ice storms in eastern Canada and flooding in Manitoba and Québec.

As climate change-related events such as these become more frequent, they will have an increasingly profound effect on Canada's economy and the health and quality of life of its citizens.

**WHAT ARE GREENHOUSE GASES (GHGS)?**

There is a strong consensus among scientists that climate change is already occurring and that human activity is contributing to it. The Earth's temperature is determined in part by a naturally occurring process known as the greenhouse effect. While certain GHGs occur naturally, human activities are releasing additional GHGs into the atmosphere. Naturally occurring GHGs include water vapour, carbon dioxide, methane, nitrous oxide and ozone. Certain human activities

produce more of these gases and other activities can create GHGs that do not naturally occur. Naturally occurring GHGs impacted by human activity include:

- **Carbon Dioxide (CO<sub>2</sub>):** An increasing amount of carbon dioxide is being released by the burning of fossil fuels (e.g., coal, oil, natural gas, etc.) for industrial purposes, transportation, and the heating/cooling of buildings, as well as by deforestation.
- **Methane (CH<sub>4</sub>):** An increasing amount of methane is being released from landfills, wastewater treatment, certain agricultural practices, as well as from grazing livestock.
- **Nitrous Oxide (N<sub>2</sub>O):** An increasing amount of nitrous oxide is being emitted into the atmosphere through the use of chemical fertilizers and the burning of fossil fuels.

Three main GHGs that are not naturally occurring, but are generated in a variety of industrial processes, are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF<sub>6</sub>).

#### **THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE**

In 1992, a global approach to address the climate change challenge was launched by the United Nations. Specifically, more than 155 countries, including Canada, signed the United Nations Framework Convention on Climate Change (UNFCCC). Since then, a number of United Nations conferences have been held, including one in Kyoto, Japan, in 1997. The outcome of that conference was a Protocol to the UNFCCC. The Kyoto Protocol established legally binding targets for those industrialized countries that ratify the agreement and the timeframes within which those targets are to be met. Additional operational details were agreed to at subsequent United Nations meetings in Bonn, Germany, and Marrakech, Morocco. Canada has supported this United Nations process as the most effective means of ensuring global action.

#### **CANADA AND THE KYOTO PROTOCOL**

Canada was a key supporter of, and contributor to, the Kyoto Protocol. Under the Protocol, Canada has to lower its GHG emissions to 6 percent below 1990 levels during the first commitment period (2008–2012). This is an ambitious target that offers significant opportunities. The transition to an economy based on lower-emissions energy is the way of the future and Canada has the opportunity to set the pace and lead the way. Canada formally ratified the Kyoto Protocol on December 17, 2002.



## CANADA'S CLIMATE CHANGE PLAN

The Climate Change Plan for Canada was tabled in the House of Commons on November 21, 2002. The plan identifies broad areas for action and key instruments that will allow for both bilateral and multilateral approaches in achieving climate change priorities.

The action areas are:

- transportation;
- housing and commercial/institutional buildings;
- large industrial emitters;
- small and medium-sized enterprises (SMEs) and fugitive emissions; and
- international emissions reductions.

The key instruments consist of:

- emission trading;
- partnership fund;
- infrastructure investments;
- innovation and technology investments; and
- targeted measures.

The Climate Change Plan identified innovation opportunities in the short, medium and long-terms, namely:

- **Short Term:** Change will initially be centred on cleaner fossil fuels and the continued development and penetration of alternative non-fossil transportation fuels and emerging renewable energies. For fossil fuels, shorter-term technological advances will involve more efficient oil and gas production and distribution.
- **Medium Term:** In the medium term, the transformation will involve the development and deployment of integrated carbon management systems (often known as CO<sub>2</sub> capture and storage) and clean coal power production. Continued technological advances will lower costs, encourage greater uptake of wind and photovoltaic power, and enable industrial processes that are less emissions intensive.
- **Long Term:** In the longer term, the challenges will be around next-generation energy systems and infrastructure related to power distribution. Among these emerging

technologies are intelligent emissions control systems and direct solar steam generation. Next generation energy systems include fuel cells and the hydrogen economy.

The Climate Change Plan outlines the government's intention to create a new mechanism, a Partnership Fund, through which it will co-invest and collaborate on emissions reduction projects as they emerge. The fund will be results oriented, selecting the most cost-effective projects while also taking into careful consideration other criteria such as the overall degree of leverage of project funding and environmental and public policy co-benefits. It is intended to complement other partnerships through federally led emissions reduction measures, and new and existing funding on innovation and infrastructure.

### **TPC AND CLIMATE CHANGE**

Innovation and technology will be key to the long-term solutions to climate change. Policies to address climate change, both in Canada and internationally, will spur innovation and, in the process, create new economic opportunities for first movers. Canadians must take full advantage of these opportunities. In that regard, the plan specifically identifies TPC as having technological R&D investments directed at climate change. Moreover, as a proven government instrument for partnering with the private sector to develop and commercialize technology, TPC is well positioned to support Canada's climate change goals. As of March 31, 2003, TPC has invested almost \$362 million in 27 projects with climate change benefits. In turn, these projects have leveraged over \$1.8 billion in private sector R&D spending. TPC anticipates that the program's ongoing support to climate change will intensify as the government moves to implement its commitment under the Kyoto Protocol.

### **THE HYDROGEN ECONOMY**

The hydrogen economy will be built on what many observers view as an inevitable transition from an economy powered by fossil fuels to one based on hydrogen. The primary driver of this new economy will be the hydrogen fuel cell. Serious interest in the fuel cell as a practical generator did not begin until the 1960s, when the U.S. space program chose fuel cells over riskier nuclear power and more expensive solar energy. Fuel cells furnished power for the Gemini and Apollo spacecraft, and still provide electricity and water for the space shuttle. Various fuels may be used, but R&D in recent years has focussed on hydrogen fuel cells.

In principle, a fuel cell operates like a battery. Unlike a battery, a fuel cell does not run down or require recharging. It will operate energy in the form of electricity and heat as long as fuel is supplied continuously from outside the cell. Hydrogen is the preferred fuel source as it makes up over 90 percent of matter in the universe and is estimated at 0.9 percent of the Earth's mass. Hydrogen is mostly provided by water, but is found in numerous other substances such as natural gas, methanol, coal and is present also in animal and vegetable matter.

Fuels cells have the power to change the future. A breakthrough, clean machine, the fuel cell harnesses the chemical energy of hydrogen and oxygen to generate electricity without combustion or pollution. Fuel cells will power the car of tomorrow – quieter, cleaner and more energy efficient. The benefits will be extraordinary in national energy security, cleaner air and economic opportunity. Fuel cells will reduce local air and noise pollution, groundwater contamination and will improve public health and safety from reduced exposure to fuel and emissions dangers.

Currently, fuel cells are being developed around the world for use in specialized portable and stationary applications, in everything from laptops to lighthouses. However, it may be a decade or more before the full-scale commercial production of motor vehicles based on this technology are realized. As the use of fuel cells grows, the benefits to the environment in the form of greatly improved local air quality and more sustainable use of non-renewable energy resources, along with those related to climate change, are becoming increasingly evident. For this reason, the *Climate Change Plan for Canada* acknowledges the tremendous long-term potential for reducing automotive-related GHG emissions in Canada offered by hydrogen-powered fuel cells.

Technology Partnerships Canada's Projects with Climate Change Benefits

Project #	Company	Project Description	TPC Investment	Private Sector Leverage	Total Project Cost	Potential CO <sub>2</sub> Reduction	Estimated Timeline?
	<b>Energy Efficiency</b>						
481934	Azure Dynamics Corporation	Medium Duty Hybrid Vehicle Platform	\$9,000,000	\$24,864,103	\$33,864,103	1.745 MT in 2010	Medium
479004	Electrovaya Inc.	Rechargeable Lithium ion Polymer Batteries	\$9,870,498	\$23,363,502	\$33,234,000		Medium
479923	Inco Limited	Development of an Environmentally Advanced Hydrometallurgical process for Treatment of Nickel Sulphide Concentrates	\$60,000,000	\$195,889,000	\$255,889,000		Long
473889	LPP Manufacturing Inc. <sup>1</sup>	Small Gasoline Engines	\$9,279,940	\$18,014,002	\$27,293,942	7 MT/year by 2010	Medium
483621	McLeod Harvest Inc.	New Grain Harvesting Technology	\$3,013,500	\$7,031,500	\$10,045,000		Short
479633	Northstar Energy Corporation	VAPEX Process Trechnology	\$7,500,000	\$17,500,000	\$25,000,000	9.4 MT/year	Medium
122408	Pratt & Whitney Canada Inc.	Dry-Low Emissions Gas Turbine	\$3,397,239	\$10,191,717	\$13,588,956		Medium
477439	Rolls-Royce Canada Ltd.	Large Gas Turbine Power Generator	\$45,200,000	\$135,600,000	\$180,800,000	0.43 MT in 2010	Short
479960	Rolls-Royce Canada Limited	Development of Medium-Sized Industrial Gas Turbine	\$30,000,000	\$92,500,000	\$122,500,000		Medium
462342	SNC Lavalin Energy Control Systems	Electric Power Systems Automation and Management Technologies	\$8,715,900	\$34,237,100	\$42,953,000		Short
480965	TIR Systems Ltd.	Intelligent Opto-Electronic Lighting Devices	\$6,636,271	\$13,328,637	\$19,964,908		Medium
479598	Trojan Technologies Inc.	Energy Efficient Delivery of UV Water Disinfection Systems	\$3,322,068	\$6,645,133	\$9,967,201		Short
461093	Western Star Trucks <sup>1</sup>	Hybrid Electric Bus	\$8,457,141	\$19,733,329	\$28,190,470	0.96173 MT/ year by 2010	Short
473479	Zenon Environmental Inc.	Membrane Water and Wastewater Treatment	\$9,886,166	\$20,071,912	\$29,958,078		Short
	<b>Sub-Total Energy Efficiency</b>	14	\$214,278,723	\$618,969,935	\$833,248,658		

*Technology Partnerships Canada (TPC) Business Plan - FYs 2003-2004 to 2005-2006*

Project #	Company	Project Description	TPC Investment	Private Sector Leverage	Total Project Cost	Potential CO <sub>2</sub> Reduction	Estimated Timeline <sup>2</sup>
	<b>Alternative Fossil Fuels</b>						
450542	Ballard Power Systems	Fuel Cell Power Plant	\$29,359,998	\$412,993,000	\$442,352,998		Medium
480207	Dupont Canada Inc.	Flow Field Plates & Direct Methanol Fuel Cells Program	\$19,040,400	\$44,427,600	\$63,468,000		Long
477235	Fuelmaker Corporation <sup>1</sup>	Natural Gas Home Refueling Appliance	\$2,960,309	\$6,010,325	\$8,970,634	reduce from 18% to 38%	Medium
451049	GFI Control Systems Inc.	Engine Fuel Control Systems	\$4,337,597	\$6,506,396	\$10,843,993	reduce by 24%	Short
477199	GFI Control Systems Inc. <sup>1</sup>	Engine Fuel Control Systems	\$6,500,000	\$13,000,000	\$19,500,000	0.005 MT/year by 2010	Short
461094	QuestAir Technologies Inc. <sup>1</sup>	Industrial Gas Separation	\$4,947,330	\$9,187,889	\$14,135,219	0.085 MT/year by 2010	Long
460753	Stuart Energy Systems Inc. <sup>1</sup>	Packaged Hydrogen Supply	\$5,841,000	\$11,859,000	\$17,700,000	0.085 MT/year by 2010	Medium
477198	Westport Innovations Inc.	Technology Development to Adapt Diesel Engines for Mobile Applications to Operate on Natural Gas Incorporating Westport Innovations' High Pressure Direct Injection Technology (HPDI)	\$18,912,010	\$44,128,024	\$63,040,034		Short
	<b>Sub-Total Alternative Fossil Fuels</b>	<b>8</b>	<b>\$91,898,644</b>	<b>\$548,112,234</b>	<b>\$640,010,878</b>		

*Technology Partnerships Canada (TPC) Business Plan - FYs 2003-2004 to 2005-2006*

Project #	Company	Project Description	TPC Investment	Private Sector Leverage	Total Project Cost	Potential CO <sub>2</sub> Reduction	Estimated Timeline <sup>2</sup>
	<b>Renewable Energy</b>						
477798	ATS Automation Tooling Systems Inc. <sup>1</sup>	Spherical Solar Technology Development	\$29,499,732	\$68,832,708	\$98,332,440	offsets: coal by 1.58, oil by 1.3, natural gas by 0.73 tons/year	Medium
452552	DynaMotive Energy Systems Corporation	Bio-oil from Biomass	\$8,235,795	\$14,876,296	\$23,112,091		Short
451040	Eastern Power Limited <sup>1</sup>	Bio-gas from Municipal Solid Waste Digestion	\$6,805,000	\$20,415,000	\$27,220,000	5 MT/year by 2010	Short
122410	logen Corporation <sup>1</sup>	Ethanol from Biomass	\$9,966,933	\$555,693,537	\$565,660,470	5 MT/year by 2010	Medium
461092	Orenda Aerospace Corporation <sup>1</sup>	Bio-oil Turbine Generator Set	\$1,167,000	\$2,709,012	\$3,876,012	0.12 MT/year by 2010	Short
	<b>Sub-Total Renewable Energy</b>		<b>5</b>	<b>\$55,674,460</b>	<b>\$662,526,553</b>	<b>\$718,201,013</b>	
	<b>Grand Total</b>		<b>27</b>	<b>\$361,851,827</b>	<b>\$1,829,608,722</b>	<b>\$2,191,460,549</b>	

Notes: <sup>1</sup> The projects that were also supported by TEAM/CCAF  
<sup>2</sup> Short refers to 0 to 5 years; medium 5 to 10 years; and, long 10 and over years



**REPAYMENT MANAGEMENT**

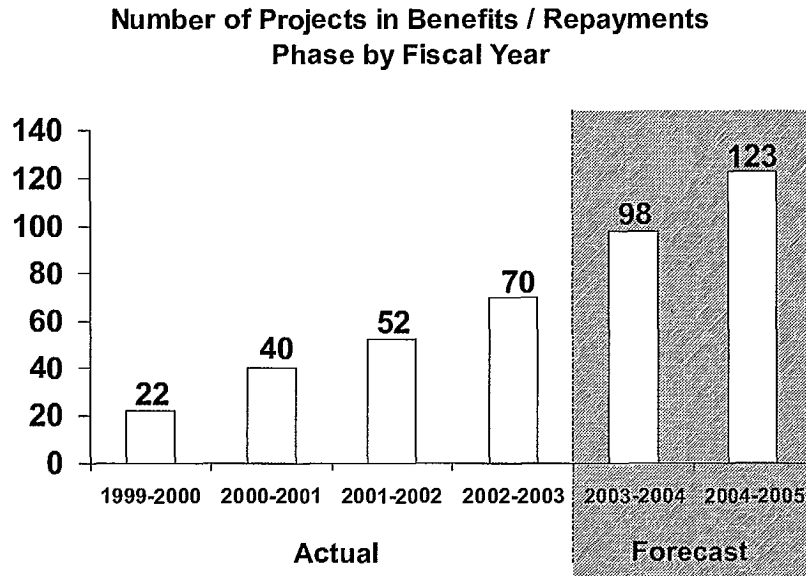
**INTRODUCTION**

TPC does not receive financial benefits from investments until the products in which new technologies are embodied are sold in the market (except for warrants and some exceptions in specific cases). As the research and development (R&D) work supported by TPC can take three to five years, with a further three to five years for products to mature and penetrate the market, it will be perhaps as much as five to ten years before TPC receives repayments. Waiting extended periods for financial returns makes TPC a “patient” investor. While repayments are an essential element of the program, TPC’s investments generate other important benefits for Canadians (e.g., accelerating innovation, advancing Canada’s KBE by increasing economic growth, jobs and wealth creation, contributing to climate change objectives and sustainable development, and other societal priorities such as health benefits, clean air, clean water, etc.). Consequently, TPC’s results should not be judged solely on the amount of repayments collected, but on the entirety of the benefits achieved.



### PROJECTS IN THE BENEFITS/REPAYMENTS PHASE

Since the first TPC project completed its Work (R&D) Phase, there has been a steady stream of investments reaching the Benefits (repayments) Phase (see Figure 1 below).



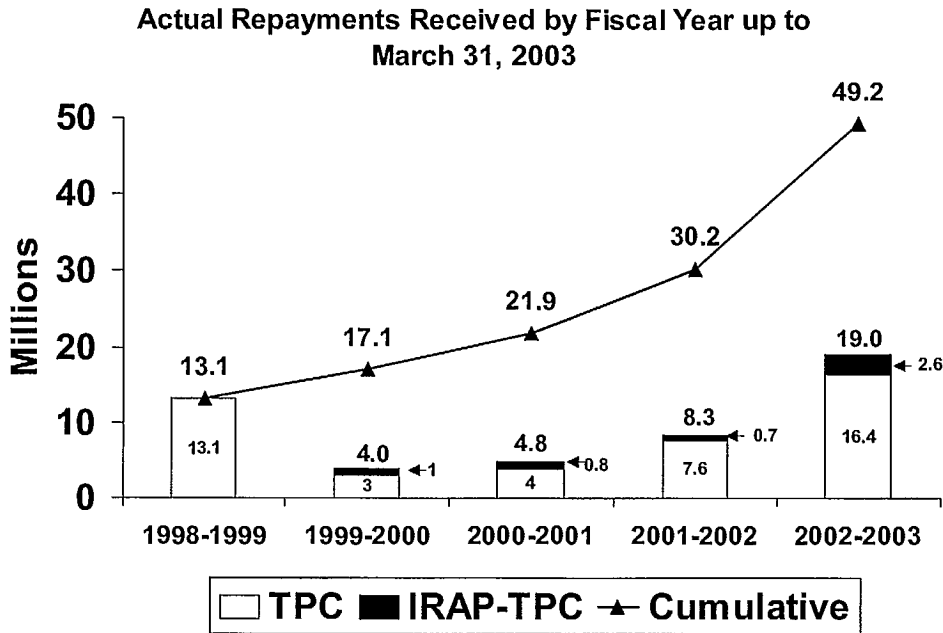
(Figure 1) These are cumulative numbers and not by individual fiscal year.

The benefits/repayments component of the TPC portfolio will continue to grow for the next five years with a commensurate need of resources to allow for proper project/program monitoring, assessment of performance and protection of the government's investments.

### REPAYMENT REVENUES COLLECTED

With the maturing of the TPC program, the first wave of projects have completed the Work (R&D) Phase and commercialization of new products is happening. A total of \$19 million of repayments were collected during 2002-2003. This is a 128 percent increase over the \$8.3 million collected for fiscal year 2001-2002, which in turn is a 73 percent increase over fiscal year 2000-2001 receipts of \$4.8 million. These amounts include repayments collected by the IRAP-TPC Initiative – the National Research Council (NRC) delivered component of the TPC program. (See Appendix G of this business plan for details on the IRAP-TPC Initiative.) Overall, since 1999-2000, IRAP-TPC has collected \$5.1 million in repayments.

As indicated in Figure 2 below, after five years of collections, cumulative actual repayments are almost \$50 million. This positive result attests to the success of TPC's strategy and practice of being a patient investor, particularly in view of the economic difficulties faced by some of the industries supported by the agency.



(Figure 2) Collections in 1998-1999 were the result of settlements with companies.

### MANAGING REPAYMENTS

TPC recognizes its fiduciary responsibility with respect to the prudent management of repayments and has implemented a process that continually refines the anticipated return on its investments. The agency's repayments are initially determined and updated annually through the following process:

- Original Forecast:** TPC negotiates a repayment plan with the company during development of the full proposal. Initially, TPC works with the company and a third-party expert(s) to determine the risk inherent in the sales forecast. Using this information, an expected return to the company is identified and considered when negotiating a fair return on TPC's investment. Specifically, repayment terms are negotiated on a case-by-

case basis, and are based on an assessment of the nature and risk of the project, need of the applicant and benefits to Canada.

- **Annual Information Updates:** Annually, through an information update that is required by the contribution agreement, the company provides revised sales schedules, job and leverage numbers, as well as explanations for changes. The updated sales information, which permits TPC to revise its repayments forecast, is reviewed by agency personnel and, as required, by a third party expert(s).
- **Anticipated Repayments:** TPC conducts annual risk assessments for all projects during which the following are considered:
  - original repayment forecasts
  - annual information updates
  - financial risk assessments prepared internally
  - external market information
  - the investment officer's own experience with the company and technology.

Through annual risk assessments, TPC determines the anticipated repayment, which is used for financial planning and reporting purposes.

Notwithstanding TPC's annual information updates and risk assessments, there is a high degree of uncertainty associated with the agency's anticipated repayment figures for a number of reasons, including:

- the relative infancy of the TPC program;
- the high-risk nature of TPC's investments given its mandate (many investments involve emerging technologies/products in undeveloped, or even anticipated, markets);
- TPC's limited experience at risk assessing anticipated repayments by project across the entire portfolio; and
- the lack of sufficient historical data to generate a precise discounting rate (note that, generally, financial institutions use 25 to 30 years of data and the experience of several business cycles to develop an effective and relatively accurate discounting rate).

#### **REPAYMENTS REVENUE PLAN**

TPC is authorized to access its repayments in an amount equivalent to actual revenues deposited during the previous fiscal year in the Consolidated Revenue Fund. In 2002–2003, TPC collected

\$19.0 million (including \$2.6 million for contributions administered by IRAP-TPC that will be retained in the IRAP-TPC envelope). Therefore, TPC will access these repayments through 2003–2004 Supplementary Estimates (less the portion allocated to the operating budget to fund collection activity). The net repayments will be recycled into the program to fund new investments.

It is recognized that not all projects will be successful, therefore company forecasts must be discounted to achieve a realistic revenue plan for repayments. Notwithstanding the need for discounting, TPC expects the exponential growth in royalty repayments to continue for three more years and forecasts to collect \$28 million in 2003–2004, \$58 million in 2004–2005, and \$95 million in 2005–2006. Over the planning period, TPC’s discounted repayment revenues, broken down by sectors and technologies, are forecasted in Figure 3 below.

**Current Discounted Repayment Forecast by Sector/Technology  
Revenue Plan (Year of Collection) (Figure 3)**

Sector/Technology (in millions of \$)	Planned 2003–2004	Planned 2004–2005	Planned 2005–2006
Aerospace and Defence	15.8	29.0	54.0
Environmental Technologies	2.6	10.5	11.0
Enabling Technologies	9.8	18.0	30.0
IRAP-TPC <sup>1</sup>	n/a	n/a	n/a
<b>TOTAL</b>	<b>28.2</b>	<b>57.5</b>	<b>95.0</b>

<sup>1</sup> IRAP-TPC is developing its forecasting model for expected repayments as well as defining discounting factors.

TPC expects that there will be further substantial increases in annual repayments for two additional years to 2007–2008, before the annual rate of repayments stabilizes.

## CONCLUSION

With an increasing number of investments coming on-line for repayments, project monitoring and contract compliance gain in importance. Also, in its short history, the TPC program has been impacted by major events outside of its control, including significant downturns in the aerospace sector and information and communications technologies (ICT). These events, originally assessed with very low probability by private sector analysts, have had a significant impact on the Canadian economy. Understandably, they have also added complexity and challenge to the management of TPC's portfolio, including the forecasting and collection of repayments.



**APPENDIX D**

**FINANCIAL FRAMEWORK  
(2003-2004 TO 2005-2006 INCLUSIVE)**

**A. CONTRIBUTION PROGRAM FUNDS**

**ALLOCATION OF BASE FUNDING**

TPC's Cabinet-approved funding level ramped up during its initial years of existence to the current level of \$294 million (\$6 million was reallocated as a result of the departmental reference level review in 2000-2001). The National Research Council (NRC) provides an incremental \$15 million to help fund the \$30 million allocation to the IRAP-TPC initiative, leaving \$279 million to fund TPC operations. Approximately \$9 million (excluding employee benefit plans) is allocated to program administration, thus leaving \$270 million available for the TPC contribution program. The agency will be seeking Treasury Board (TB) approval in 2003-2004 to transfer contribution resources to its program administration allocation as a result of the agency's reorganization and to better position itself to administer, deliver and monitor the program in the coming years (refer to Section B - Operating Funds below). Although this proposal was planned in last year's business plan, the program was able to manage within an increased 2002-2003 base, as departmental operating resources were injected into TPC as a temporary relief measure. A permanent solution will be sought in 2003-2004.

Under the current approved financial framework, TPC allocates at least one-third of contribution funding to environmental and enabling (E&E) technologies and two-thirds to the aerospace and defence (A&D) sector. Furthermore, repayments collected in the previous fiscal year are retained for the upcoming fiscal year and allocated on a relative need basis. However, during 2003-2004, TPC will seek Cabinet and TB authority to rescind the one-third : two-thirds allocation rule.

**ALLOCATION OF REPAYMENTS COLLECTED**

During 2002-2003, TPC obtained from TB a two-year extension to reinvest its recycled repayments into the program to help grow the fund. TPC will continue discussions with central agencies to monitor the efficacy of its repayment mechanisms and special flexibilities. A request via TB submission to extend this authority on a longer-term basis will be presented prior to the

2004–2005 Supplementary Estimates. Under the current recycling of repayments regime, TPC can access its actual, prior-year contribution repayments via Supplementary Estimates up to and including fiscal year 2003–2004 (for repayments collected in 2002–2003). During fiscal year 2002–2003, TPC collected some \$19 million in repayable contributions.

Recycling of repayments authority is central to the program’s long-term viability, as it allows TPC to reinvest funding to help grow the fund. At the time the agency was founded, it was envisaged that recovered funds would be recycled into TPC’s funding base to allow for potential future growth. Access is, however, limited to the year immediately following collection. To effectively manage multi-year investments, TPC requires the flexibility of continuous access to repayments during the years when the funds are most needed commensurate with the agency’s multi-year investment requirements.

The following table sets out TPC’s planned spending for 2003–2004 to 2005–2006, which includes funding proposals since the 2003–2004 Annual Reference Level Update; namely, the carry-over of unused funds and the recycling of repayments. It illustrates the funding levels available to TPC over the planning horizon (affected by the multi-year nature of the agency’s investments) as well as commitments for the same period on currently contracted investments. Previous commitments on contracted investments absorb a significant portion of this funding and the remaining balance is available for new investments.



**Table 1. TPC Program Financial Spending Plan (\$ millions)**

	Actual 2002-2003	Forecast 2003-2004	Forecast 2004-2005	Forecast 2005-2006
BASE FUNDING	300.0	300.0	300.0	300.0
Adjustments:				
Funding from NRC (IRAP-TPC)	15.0	15.0	15.0	15.0
Funds Reprofiled	61.4	1.1	0.8	0.4
Funds lapsed in previous years / carried forward	15.0	40.0	40.6	20.0
Funds lapsed in 2002-2003 and carried forward	(41.5)	41.5	—	—
Reference Level Review	(6.0)	(6.0)	(6.0)	(6.0)
Innovation Agenda Engagement Strategy	(12.0)	—	—	—
Reinvestment of repayments collected <sup>1</sup>	6.4	16.5	28.2	57.5
Funding Available to the program	<b>338.3</b>	<b>408.1</b>	<b>378.6</b>	<b>386.9</b>
Less: Program Operating Costs <sup>2</sup>	(10.5)	(19.0)	(20.9)	(20.9)
Contribution Funding for IRAP-TPC	(28.2)	(38.1)	(28.0)	(28.0)
Contribution Funding Available for TPC Investments	<b>299.5</b>	<b>351.0</b>	<b>329.8</b>	<b>338.1</b>
Less: Cashflow Requirements on Contracted Investments as of May 5, 2003	(299.5)	(292.9)	(204.0)	(114.3)
<b>Funding Available for New TPC Investments</b>	<b>—</b>	<b>58.1</b>	<b>125.8</b>	<b>223.8</b>

<sup>1</sup> The figures are one year after collection: for 2002-2003 and 2003-2004, the repayments are net of the operating portion for the administration of repayments. For 2004-2005 and 2005-2006, the amount includes the operating portion, to be determined at a later date.

<sup>2</sup> Assumes TB approval of a vote transfer starting in 2003-2004.

## PROGRAM APPROVALS

Overall, during 2002-2003, TPC approved close to \$404 million – a level similar to the expected approval level of \$415 million planned in last year's business plan. A higher than expected approval level was realized in E&E while A&D underachieved in meeting its approval targets. In 2002-2003, several large strategic investments were considered in both components. A total of \$29 million was approved under the IRAP-TPC component (cumulative investments total nearly \$127 million). To fully optimize its resource utilization, the program is more aggressive in determining its future year approval capacity. Hence, in 2003-2004, funding available for new investments should remain at an approval level of \$415 million (Figures 1 and 2).

However, approval rates planned for 2004–2005 and future years will have to revert back to a lower level if all 2003–2004 approval targets are met. Some uncertainty remains on the effect of government funding and reallocation decisions in the areas of overall reductions in program expenditures as well as TPC’s level of assistance toward government priorities, such as Kyoto and Climate Change initiatives. Depending on the outcome of these issues, inevitably TPC program approvals will be impacted and adjusted accordingly during the fiscal year.

Of the \$415 million that TPC expects to contract in new investments during 2003–2004, \$275 million is earmarked for the A&D component (Figure 1) while \$140 million is targeted to E&E (Figure 2). This represents a higher than average approval level for E&E and a normal approval level for the A&D component.

Figure 1. Annual A&D Approval Levels (\$ Millions)

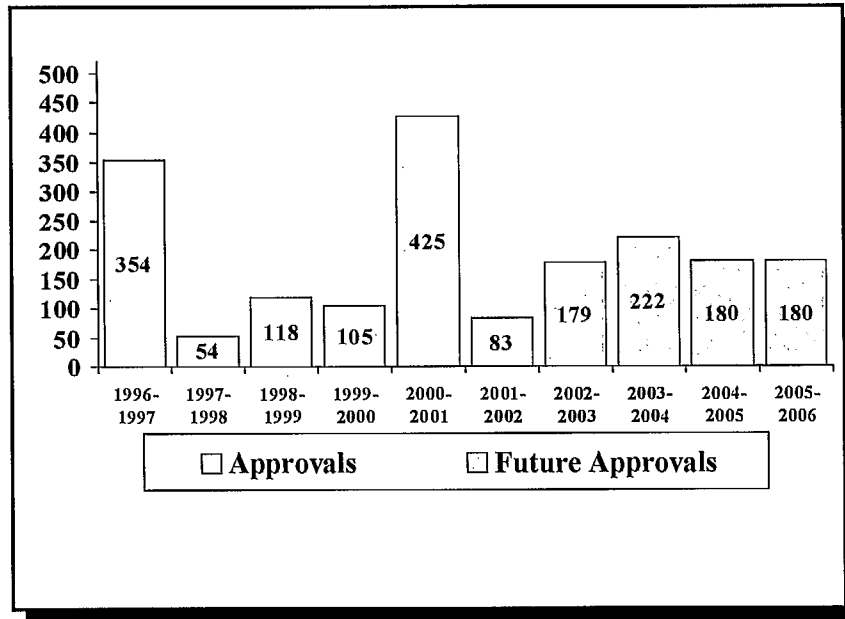
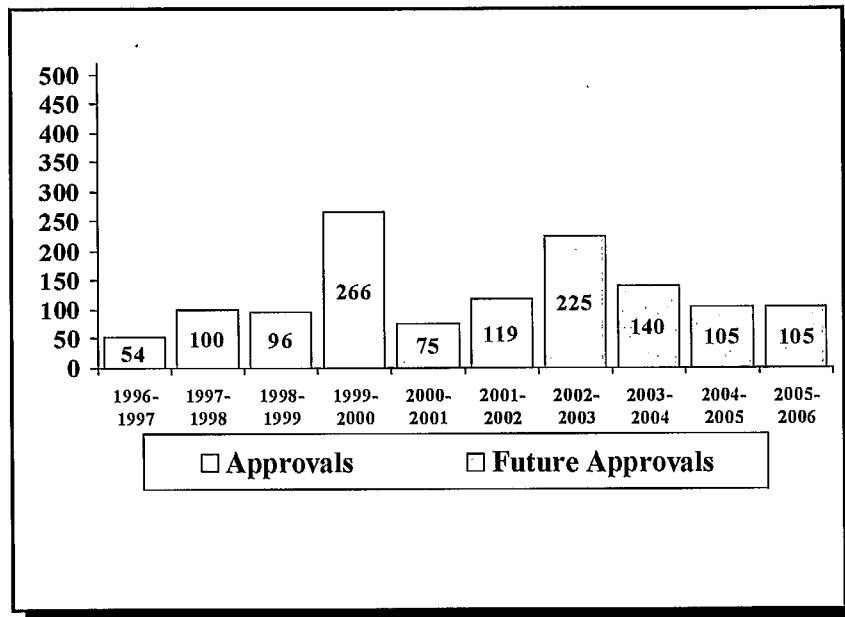


Figure 2. Annual E&E Approval Levels (\$ Millions)



## **INVESTMENT CASHFLOWS**

In 2003–2004, TPC will continue to manage an increasing claims activity, since disbursements from current and planned investments are expected to exceed \$300 million. In 2002–2003, TPC assessed and recommended payment on over 600 client claims, a substantial increase from the 2001–2002 level of some 475 client claims. Again, in 2003–2004, the client claim volumes are expected to increase to some 700 claims. IRAP-TPC will also expend some \$30 million, for a total of approximately \$330 million. In 2002–2003, TPC disbursed almost \$328 million as planned in last year's business plan (target of \$330 million). The effective cash management of program funds entails a continuous monitoring of cashflows in order to remain within the funding flexibility and to optimize approval levels. By the fall, because investment proposals will have progressed in the investment approval cycle, the agency will be in a better position to evaluate its current and future year cash requirements and, if necessary, will realign its budgets based on the approved funding flexibility.

## **FLEXIBILITIES IN MANAGING CONTRIBUTION ALLOCATIONS**

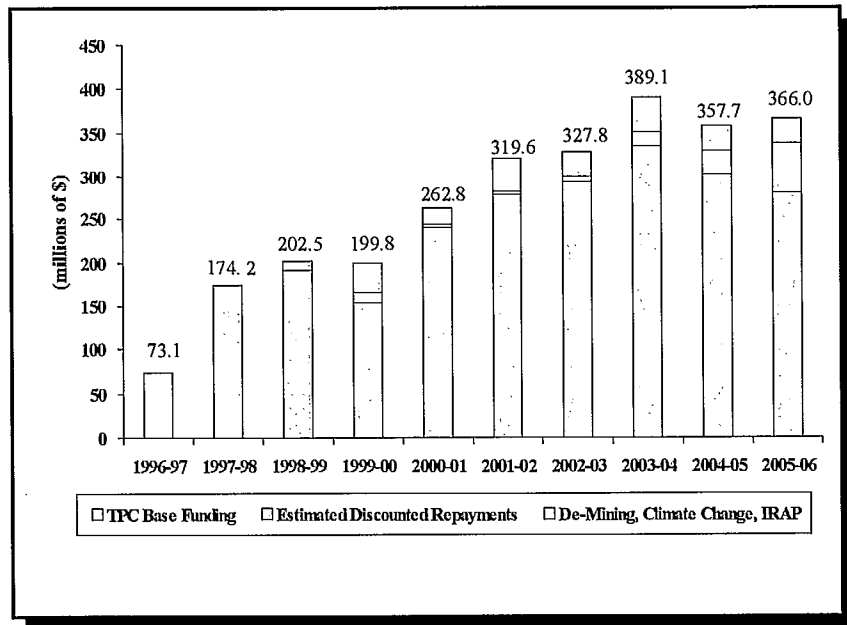
Through flexibilities approved by TB, TPC currently has authority to carry over unused contribution funds to the limit of 20 percent of the Cabinet funding level of \$300 million (or \$60 million) and to recycle repayments into the fund the following year. This flexibility is required to effectively manage resources in order to better support R&D multi-year investments through an annual appropriation authority. The TB authority to recycle repayments into the program was renewed in 2002–2003, and access to recycled repayments is available to TPC for reinvestment up to and including fiscal year 2003–2004 (for repayments collected in 2002–2003). However, the agency will continue discussions with central agencies on the possible mechanisms and rules by which repayments are accessed for reinvestment, which would provide for more effective management of program funds to TPC. The aim is to ensure full utilization of TPC's approved resources within approved flexibilities on a fluctuating portfolio of multi-year investments.

## **GROWTH IN CONTRIBUTION BUDGET LEVELS**

The overall contribution budget is expected to continue to grow as repayments increase and these revenues are recycled into the fund, as well as funds carried over from previous years, from the authority granted by TB. It remains unclear how the government priorities (Speech from the Throne commitments – program reductions and climate change) will impact budget levels.

Furthermore, TPC is an attractive investment tool and its funding mechanism makes it a logical partner to support and deliver new government initiatives. TPC is continuously open to opportunities to solidify alliances with other government departments and agencies. The available contribution funding levels have grown from \$73 million in 1996-1997 to \$366 million in 2005-2006 (Figure 3), due to the reprofiling of unused funding from previous years, reinvestment of repayments, and funding arrangements with other government departments.

Figure 3. Growth in Contribution Budget Levels



### TPC SUPPLY AND DEMAND

From the existing contractual obligations on the investment portfolio, a large portion of A&D and E&E funding is already committed for 2003-2004 (Figures 4 and 5). Current opportunities in both program components significantly exceed available funding.

Figure 4. Annual A&D Budgets and Cashflows

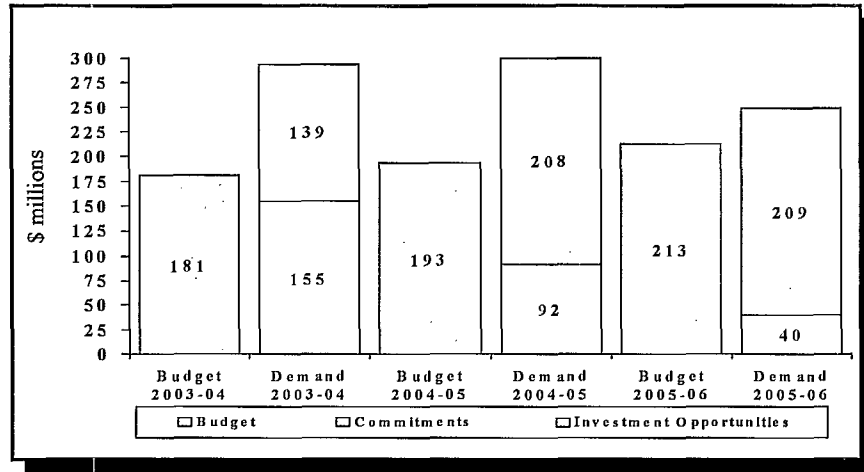
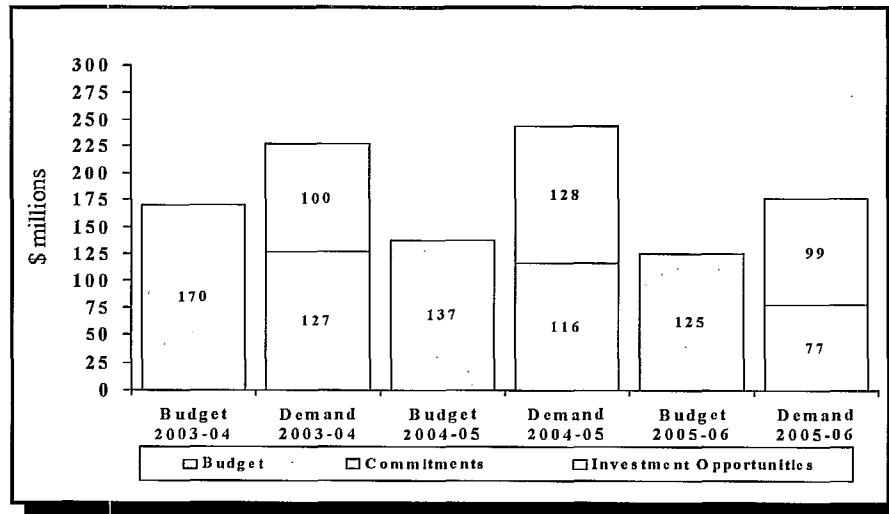


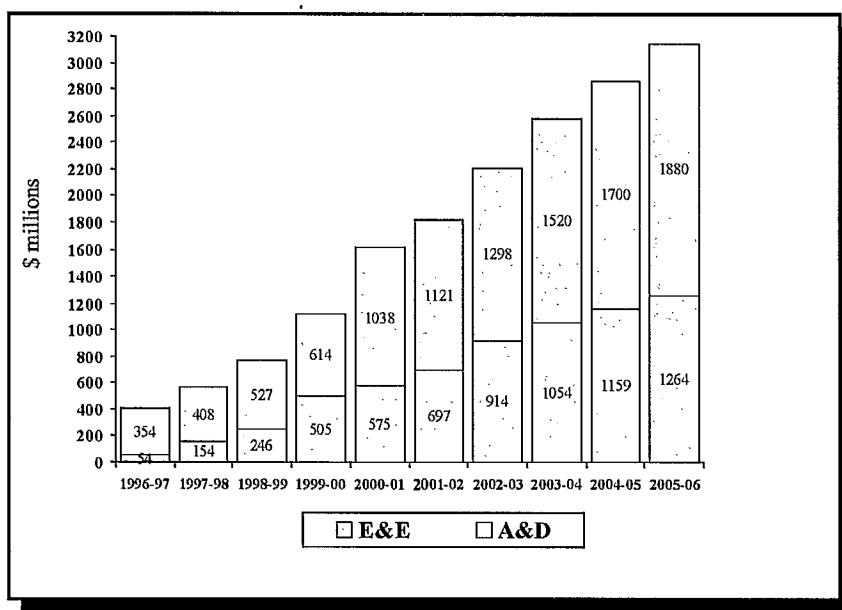
Figure 5. Annual E&E Budgets and Cashflows



**ACTIVE PORTFOLIO OF TPC CONTRACTED INVESTMENTS UNDER ADMINISTRATION**

The portfolio of TPC investments has grown rapidly over its initial seven years and surpassed \$2.2 billion in value in 2002–2003 (excluding \$127 million in IRAP-TPC investments under administration). Based on current available budget allocations, this absolute value is expected to exceed \$3 billion by the end of 2005–2006 (refer to Figure 6 for historical and planned cumulative value of contracted projects). The growth of the portfolio over the remaining planning years is dependent upon the results pertaining to the A&D/E&E split of resources.

**Figure 6. Active Portfolio of Contracted Investments under Administration**



In terms of volume or number of projects, in 2002–2003, there were 39 investments contracted in TPC, and 81 were approved in IRAP-TPC, for a combined total of 537 active investment files to administer. Due to its significant growth in value and total number of projects, the overall portfolio requires careful monitoring and administration. In recent years, TPC broadened its capacity in this area (for projects in the Work Phase) and this issue will remain a management priority over the planning period. Furthermore, as the total cumulative number of completed projects since TPC’s inception is increasing (and expected to continue as initial projects mature and commence repayments), the emphasis will continue in 2003–2004 to actively monitor these projects in the Benefits Phase.

In 2002–2003, work commenced on the agency’s program evaluation (initially planned in earlier years but delayed). Results and findings stemming from this evaluation are expected during 2003–2004 and will assist in identifying improvements to the active monitoring initiatives as well as other management and performance aspects of the program areas. As well, an internal audit of TPC operations was conducted in 2002–2003 and again results will be available during 2003–2004. Management will strive to react and implement audit recommendations that will improve program management, administration, delivery and monitoring.

## **B. OPERATING FUNDS**

When TPC obtained full Special Operating Agency (SOA) status, TB approved approximately 3 percent of TPC’s total budget for program administration – currently at \$9 million before adjustments. In addition, subject to TB approval, TPC is using a portion of net recycled repayments in its operating funds to cover the costs associated with the management and collection of revenues. The amount of recycled repayments included in Supplementary Estimates is first used to offset anticipated operating costs incurred with respect to the collection of revenues. The remainder is used to augment TPC’s contribution funding level to permit reinvestment into the fund.

Program administration costs include all costs to administer, manage, deliver and monitor the program. At the time TPC obtained full SOA status, the level of funding allocated for program administration was linked directly to the agency’s budget and was adequate to launch TPC. These resources were primarily directed at operations with an emphasis on doing the due diligence necessary to secure the appropriate high-risk investments needed to launch the agency. However, the resources for program administration identified at start-up could not have envisaged the requirements of a portfolio that would expand rapidly to over 500 investments valued at more than \$2.3 billion (including \$127 million for IRAP-TPC). Evidently, insufficient resources are available to appropriately monitor the increasing number of projects funded by TPC. The strain on program administration resources will also increase due to the number of agreements that will be entering the monitoring phase, thereby significantly increasing the level of work required in that area, in addition to the monitoring and verification of client claims. In short, TPC’s current operating budget is inadequate to effectively manage a complex portfolio of high-value and high-risk investments.

As stated earlier, TPC will be presenting a TB submission during 2003–2004 to seek a vote transfer to increase its operating budget allocation to be funded by an offset in the contributions budget. Consequently, TPC expects to address its operating budget pressures through the TB



process and will seek to increase the current 3 percent level dedicated to program administration in future years. The request for operating resources proposes that TPC's operating budget be increased to a level commensurate with the size and complexity of the portfolio to be managed.

An internal audit as well as a program evaluation was carried out during 2002–2003. Results are expected to be finalized later in 2003–2004. Preliminary audit findings state that “TPC is constrained to limit program administration costs to approximately 3 percent of total program funding. This has resulted in key positions not being staffed and increases the risk that program monitoring, delivery, management and administration are not as effective as they should be.”

TPC needs to expand its staff to meet the increased activity and heavy demand resulting from its rapidly growing portfolio. Increased resources are needed to:

- implement the new organizational structure designed to effectively manage program growth
- strengthen the management of portfolio and results monitoring as well as project audits and performance measurement functions
- enhance support to regional innovation by locating officials in the regions (including the IRAP-TPC component)
- strengthen partnerships, alliances and interrelationships with stakeholders, such as those in the climate change area
- reinforce communications-related activities.

In the past, TPC successfully limited its administration expenses to approximately 3 percent of total program funding. However, this was at the cost of not fully developing the corporate functions needed to manage the portfolio. TPC's portion of program funding dedicated to program administration has constantly increased over the past few years to a level beyond 3 percent (over 4 percent in 2002–2003). The program is now at the point where the existing dedicated program administration resources limited at 3 percent are insufficient to meet the growing needs to ensure a sound management of a growing investment portfolio, now valued at over \$2.3 billion.

**Table 2. Percentage of Administration Expenses to Program Funds**

(in thousands of dollars)	Actual 2001-2002	Actual 2002-2003	Planned <sup>1</sup> 2003-2004	Planned <sup>2</sup> 2004-2005	Planned <sup>2</sup> 2005-2006
Operating Budget <sup>1</sup>	8,398	10,661	16,218	17,828	17,828
Direct FTEs – notional <sup>2</sup>	54	69	111	137	137

<sup>1</sup> Excludes employee benefit plans and the IRAP-TPC component.

<sup>2</sup> Dependent on TPC obtaining approval of its vote transfer TB submission

The current limitation of approximately 3 percent of the agency's budget for program administration has proven to be unduly restrictive in the past and will not be operationally effective given the organizational and administrative changes needed. The size of TPC's portfolio (as opposed to annual budget) should be the primary consideration in determining TPC's operating budget. The rapid growth and increasing complexity of TPC's portfolio necessitates that an increased staff is required to manage all aspects of the program.

#### SPECIFIC FUNDING PRESSURES AREAS

- **Increased Communications Activities:** Since TPC's inception, it has become increasingly apparent that a bold and aggressive communications strategy is a mandatory ingredient for the program's success.
- **Reinforced Regional Support:** TPC has established and staffed positions in all regions of Canada to:
  - promote TPC and other federal programs in support of innovation;
  - be a point of local contact for companies and other organizations in each region
  - identify and refer regional projects for consideration; and,
  - provide a regional point-of-view to the operational activities of TPC.
- **Provide In-House Services Formerly Public Works and Government Services Canada (PWGSC):** PWGSC was one of TPC's principal government partners providing important program delivery support. These resources are no longer available to support TPC's activities in the areas of: contracting, contract management, audit, cost analysis and certification of progress claims. Replacing these critical services will add substantial new costs to TPC's program administration budget.



**BUILDING RELATIONSHIPS**

**INTRODUCTION**

**Technology Partnerships Canada (TPC) is Canada's innovation instrument.**

Innovation in the marketplace demands innovative government programs and thinking. TPC is in a period of transition, moving forward, to become a more flexible and agile instrument of government policy. TPC will be: more engaged with its partners in government and the private sector, more transparent in its operations, and more innovative in program delivery.

The TPC business plan is the road map for the future. The key thrust of this is the absolute need to build the relationships needed to move forward. This document highlights the key initiatives that are needed for progress.

**An innovative Canada needs an innovative TPC.**

**KEY MESSAGES**

- Innovation is the currency for success in today's global knowledge-based economy.
- Innovation is driving technological change.
- TPC is Canada's innovation instrument, investing in technology for the benefit of all Canadians.
- TPC invests in leading-edge R&D to promote the commercialization of "great Canadian ideas."
- TPC is needed, valued, proven, professional and accountable.
- TPC is sharpening, focussing and creating flexibility to enable the government to capture opportunities and to deliver on priorities.
- TPC is a partner with Canadians and Canadian industry.

## **THE WAY AHEAD**

TPC has launched a number of initiatives under the theme of Building Relations – Connecting; Consulting; and Communicating. The intent is to ensure that TPC is engaged with its stakeholders, hears what they have to say, and ensures they are aware of the program and its opportunities and understand how it works.

**Connecting:** Innovation is about building partnerships and alliances with government, business, communities and academia working as a team. It's about “connecting” innovative Canadians.

TPC must connect with its stakeholders in government and the private sector. This means building bridges with parliamentarians, reaching out across Canada through Industry Canada Regional Offices and the new Regional Innovation Officer Team. TPC will continue to strengthen its IRAP-TPC initiative with the National Research Council and its ties with key industry associations across Canada.

Canada's Industry Committee presents an opportunity to help TPC build bridges and to pipeline key industry information to the agency in order to focus the program and maintain relevance.

Stronger relations result in increased third party support. TPC's innovation partners will be more willing and able to step forward and support the benefits and results of the program.

**TPC can and should accelerate Canadian innovation by being a strong player on the Innovation Team.**

**Consulting:** Once TPC builds the relationship and connects with its stakeholders it must create the opportunity for them to be heard and for the program to learn. Consultations are key.

TPC will develop and implement a consultations plan that will contribute on a number of levels but, in particular, will help in the crafting of the *TPC Investment Strategy and Priorities*. TPC will have an ongoing consultations schedule where senior management will meet with stakeholder partners.

In government, stronger links will be developed with parliamentarians, key decision-makers in other departments and central agencies and in Industry Canada with the Industry Sector and Industry and Science Policy.

**A strong player on the Innovation Team must be relevant and able keep pace with change.**

**Communicating:** Good relations and quality consultation demand that stakeholders are aware of and understand TPC.

TPC has implemented and is enhancing its communications and outreach activities. It has a new Web site. It has placed renewed emphasis on media outreach, particularly, business media and industry magazines. It has retooled its messaging focussing on the long-term benefits of R&D investments. Canadians will see and hear more about successes and their impact.

Transparency is a key element of good communications. The annual TPC Year in Review is 'more timely'. And, there will be greater efforts to explain how TPC operates, the rules and guidelines, the rationale for investment decisions, risk and reward and repayments.

**An informed partner is a good partner.**







**HUMAN RESOURCES PLAN**

**BACKGROUND**

Technology Partnerships Canada (TPC) is a young organization that has experienced significant change since its inception in 1996. Growth and turn over of staff have posed major challenges in planning and managing human resources (HR). These challenges will continue in the future as additional staffing is planned to effectively manage TPC's high-profile, high-value portfolio.

TPC's vision is "to be a professional organization, dedicated to working in close partnership with other parts of the federal government and the private sector, capable of making strategic high-risk investments in R&D to achieve specific objectives." Moreover, the TPC program is complex as it involves both private sector and government players, targets strategic industries and thus relates to key technologies within the Canadian economy. This complexity adds to the challenge of ensuring that TPC is properly staffed with the highly skilled personnel needed to meet its program objectives.

It is axiomatic that people are an organization's most important resource. Human resources must be cared for, provided a challenging work environment and nurtured so they can meet their personal and professional goals while effectively contributing to the organization's achievements. To facilitate this contribution, HR planning that provides for continuity is a must. HR planning is usually done on an ongoing multi-year cycle and consists of a myriad of activities, including the core functions of planning, organizing, directing and controlling/monitoring. Obviously, the cycle is guided by policies and procedures and supported by appropriate tools.

Although a myriad of activity can be undertaken in the HR area, due to limited resources and short time frames, TPC must plan against specific HR priorities. The intent is to undertake HR initiatives that incorporate targeted activities and actions designed to maintain a healthy and motivated work force. The HR plan at the end of this appendix is designed to achieve this important goal.

## **GUIDING PRINCIPLES**

To ensure that TPC can fulfil its mandate and meet its objectives, the following principles guided the development of the agency's HR plan. TPC will:

- strive to be an Employer of Choice
- reach out to attract the most qualified people
- make all possible effort to maintain and retain a well trained, developed and motivated work force.

## **MAIN THRUSTS**

During 2003–2004, TPC will focus its effort on the following areas:

- Risk assessment at TPC means identifying areas of organizational exposure in critical positions and planning succession in the event of staff departures, temporary or permanent. Areas of exposure will be identified during 2003–2004.
- Recruitment and orientation at TPC means that managers are well equipped to find qualified applicants and select the best candidates that meet the requirements of positions being staffed. Recruiting will be guided by a thoughtful staffing strategy. New employees will be introduced to the various aspects of the organizational infrastructure and operations, their duties, supervisors and work groups.
- Training and career development at TPC means improving the knowledge, abilities, attitudes and performance of individuals, groups or even the total organization with a focus on planning a meaningful work life and career with the agency. Learning and career development must be owned by the employee, facilitated by managers and supported by the organization.
- Workplace well-being at TPC means developing an environment that fosters employee well-being, work life balance and optimal work satisfaction. Efforts are also put forth to foster a culture that promotes pride and recognition.
- Equal employment and diversity at TPC means developing a work force representative of employment equity groups and respectful of cultural and other differences. There is also a new requirement recently announced by the Deputy Minister to develop an Equal Employment and Diversity Plan.

The following criteria and definitions were used during preparation of TPC's HR plan:

- Priority refers to Low, Medium and High.
- Timing logically flows from priority setting.
- Champion is the TPC director/manager that leads the undertaking of a given action approved for implementation.

#### **INDUSTRY CANADA'S PEOPLE MANAGEMENT PLAN**

Industry Canada's People Management Plan (PMP) represents a human resource strategy and plan of action for all departmental employees in response to La Relève (1996). The end goal of the PMP is to help Industry Canada achieve its objective of becoming an Employer of Choice for people with the necessary competencies to allow the department to achieve its lines of business. The PMP is predicated on the four principles of renewal, retention, recruitment and representation, as well as an understanding of the department's strength and areas of vulnerability. In response to the results of the 1999 Public Service Employee Survey, as well as department-wide consultation held at the beginning of 2000, the PMP priorities were reordered and revised to provide a more concrete expression of the goals and actions proposed to address priorities. The three resulting priorities of the PMP include:

- improving the well-being of the workplace
- investing in people through learning and career development
- investing in the future organization by recruiting a skilled and representative work force.

TPC's HR plan is designed to be in consonance with the department's PMP.

**2003-2004 HR Plan at Technology Partnerships Canada**

Goals	Proposed Actions	Priority	Timing	Champion
<p><b>PRIORITY 1: RISK ASSESSMENT AND BACKUP STRATEGIES</b>                      Several areas within TPC are critical to operations (e.g. finance group, information systems, directors) and cannot be left in a void for a long period of time without creating significant disruption to the Agency's operations.</p>				
<p><b>1.1 Assess and address TPC's risk exposure related to human resources</b></p>	<p>1.1.1 Identify key risk positions where TPC is exposed to significant disruptions to operations in the event of a sudden and prolonged absence of the incumbent</p>	<p align="center">High</p>	<p align="center">Ongoing</p>	<p align="center">Directors</p>
	<p>1.1.2 Identify backups/replacements</p>	<p align="center">Discretionary</p>	<p align="center">Ongoing</p>	<p align="center">Directors</p>
	<p>1.1.3 Train back-ups and replacements as necessary</p>	<p align="center">In many cases insufficient resources to do this year</p>		
	<p>1.1.4 Longer term planning and succession planning</p>	<p align="center">Insufficient resources to do this year</p>		

*Technology Partnerships Canada (TPC) Business Plan - FYs 2003-2004 to 2005-2006*

Goals	Proposed Actions	Priority	Timing	Champion
<p><b>PRIORITY 2: RECRUITMENT AND ORIENTATION</b>                      In 2003-2004, TPC is expected to significantly increase its staff complement. This may require providing support to managers not only to facilitate the staffing process but also to introduce new people within the organization. There is a need within TPC to better assist managers in hiring staff and ensure they provide all new employees with appropriate tools to effectively familiarize them with the organization and get acquainted with their new job.</p>				
<p><b>2.1 Improve support to managers in the hiring of new employees</b></p>	2.1.1 Organize with IC/HRB an information session on the staffing process and deliver to managers	High	Ongoing	PSD with guidance from HRB
	2.1.2 Consult managers and identify areas of support required	High	Ongoing	PSD
	2.1.3 Develop a staffing strategy	High	Ongoing	Each Director with guidance from HRB
<p><b>2.2 Improve support to managers to orient new staff</b></p>	2.2.1 Develop and communicate an orientation policy, process and related procedures	High	Ongoing	PSD
	2.2.2 Develop a comprehensive check list that identifies all areas that should be included in the orientation of new employees	High	Ongoing	PSD
	2.2.3 Develop a TPC core package applicable to all new employees being oriented	High	30 November, 2003	PSD
	2.2.4 Develop a form and perform an evaluation of the orientation program	Medium	Ongoing	PSD
	2.2.5 Organize a "learning Day" or learning event for TPC staff where each directorate/area does something creative to showcase what they do and all staff are expected to visit each area to learn, similar to the "Industry Canada Open House" that was done a few years ago	Insufficient resources to do this year		
	2.2.6 Start a TPC mentoring program	Insufficient resources to do this year		

*Technology Partnerships Canada (TPC) Business Plan - FYs 2003-2004 to 2005-2006*

Goals	Proposed Actions	Priority	Timing	Champion
<p><b>PRIORITY 3: TRAINING AND CAREER DEVELOPMENT</b>                      To develop and maintain a well trained and motivated workforce. Provide guidance and support to staff to orient their development towards meeting their professional goals in line with TPC's organizational needs and requirements.</p>				
<p><b>3.1 Foster career development within TPC</b></p>	<p>3.1.1 Compile a training and development plan to assist staff in their preparation to progress within the organization and so meet their career objectives</p>	<p>High</p>	<p>30 June, 2003</p>	<p>All Director &amp; Managers</p>
	<p>3.1.2 Establish a professional development tool kit</p>	<p>Insufficient resources to do this year</p>		
	<p>3.1.3 Develop a "TPC Assignment Program" where TPC officers could take 6 months or 1 year assignments within TPC for developmental purposes</p>	<p>Insufficient resources to do this year</p>		

*Technology Partnerships Canada (TPC) Business Plan - FYs 2003-2004 to 2005-2006*

Goals	Proposed Actions	Priority	Timing	Champion
<p><b>PRIORITY 4: WORK PLACE WELL-BEING</b>                      TPC's staff is located in three different buildings which creates a challenge to developing and maintaining a good team spirit and relationships, as well as effective internal communications. Initiatives such as the Christmas party and golf day positively contribute to some extent to reinforcing these latter aspects. However, not much is known on staff satisfaction at TPC regarding its working environment and general atmosphere, and what areas need improvement so that TPC is recognized as an Employer of Choice.</p>				
<p><b>4.1 Ascertain that TPC fosters a healthy / positive work environment</b></p>	<p>4.1.1 Develop and conduct an in-house consultation /survey which will include the following as a minimum:                      - identify what is liked                      - identify what needs improvement                      - obtain suggestions on areas of improvement                      - identify means to ensure TPC's various units work as a team                      - identification and recognition of cultural and other differences</p>	<p>Low /insufficient resources to do this year</p>		
	<p>4.1.2 Develop a plan to address the results of the consultation on these various issues, including priorities and related actions</p>	<p>Low /insufficient resources to do this year</p>		
<p><b>4.2 Motivate, recognize and reward achievements</b></p>	<p>4.2.1 Develop a pride and recognition framework and approach to identify, recognise and reward outstanding achievements at TPC</p>	<p>Medium</p>	<p>30 November, 2003</p>	<p>PSD</p>
<p><b>4.3 Ensure equal employment and diversity</b></p>	<p>4.3.1 Develop an equal employment and opportunity plan for TPC</p>	<p>High</p>	<p>30 June, 2003</p>	<p>PSD</p>
	<p>4.3.2 Develop a diversity plan</p>	<p>High</p>	<p>30 June, 2003</p>	<p>PSD</p>







**THE IRAP-TPC INITIATIVE**

**BACKGROUND**

Technology Partnerships Canada (TPC) and the Industrial Research Assistance Program (IRAP), managed by the National Research Council of Canada (NRC), have joined forces to support innovative small and medium-sized enterprises (SMEs) by investing in projects in the pre-commercialization stage. This initiative, which is known as IRAP-TPC, provides repayable contributions that share in both the risks and the rewards of innovative high technology development.

**A PARTNERSHIP WITH IRAP**

Since its origins in 1947, IRAP and its predecessor have been NRC's technology and innovation assistance program for SMEs. IRAP is delivered to firms through technically qualified and industrially experienced Industrial Technology Advisors (ITAs). Through the national network of ITAs, as well as linkages to other networks such as the Canadian Technology Network, ITAs help clients connect with the information, expertise, and other resources they need to undertake and develop their innovation activity. A total of 260 ITAs work in 90 locations across Canada.

Through IRAP-TPC, ITAs offer financial assistance to SMEs to support the various activities required to improve the technological competitiveness of those firms. This support is delivered with the same high standards of development assistance and administrative simplicity that have characterized IRAP from its outset. As with other IRAP financial assistance, contribution decisions for IRAP-TPC are made in the regions. In addition, the responsible ITA remains the main point of contact for questions and assistance for the duration of the project.

As IRAP-TPC enters its sixth year of operations, the initiative has reached near full-scale delivery capacity. Consistent efforts have been successful in developing guidelines and procedures for defining the program in order to ensure better delivery, while concurrently assessing and addressing regional concerns, interests, priorities and resources.

An important, yet challenging, aspect of IRAP-TPC is its efficient and uniform program delivery. Emphasis was placed on finalizing key standardized documents, which was a major step toward achieving a more consistent national delivery.

### **THE IRAP-TPC INITIATIVE**

IRAP-TPC, which is managed through a Memorandum of Understanding (MOU), is a joint initiative between IRAP and TPC to provide pre-commercialization assistance to SMEs. In short, IRAP delivers TPC projects with eligible costs of \$3 million or less to SMEs. IRAP-TPC is not a new program. Rather, this initiative brings together two complementary services to SMEs dedicated to providing pre-commercialization assistance for innovative technologies.

IRAP-TPC came into effect on April 1, 1998, and was renewed for a further five year period on April 1, 2003. IRAP-TPC will terminate on March 31, 2008, unless extended by mutual written agreement of both parties.

### **PROGRAM DELIVERY ARRANGEMENTS**

The following is a summary of program delivery arrangements for the IRAP-TPC initiative:

- The program authority for contributions made under IRAP-TPC is TPC Terms and Conditions and is subject to any policy direction and delegation of financial and decision-making authority that may be provided by the Minister of Industry.
- IRAP-TPC will make contributions for projects with eligible costs of \$3 million or less to SMEs (defined for the purposes of this agreement as eligible recipients having 500 or fewer employees). Projects meeting the above described size and project costs criteria are referred to as "IRAP-TPC projects." (Note: Projects with total eligible costs in excess of \$3 million will be referred to TPC for consideration.)
- IRAP will have leadership in the management and delivery of IRAP-TPC. This includes the selection, assessment and approval of IRAP-TPC projects and the establishment of appropriate operational policies, procedures and practices.
- TPC will not make any contributions to projects eligible under IRAP-TPC during the life of this agreement, unless by mutual consent.
- All IRAP-TPC contributions will be repayable. Terms of repayment will be specified in the contribution agreement signed by the recipient-firm and will be subject to the relevant sections of the Treasury Board Policy on Transfer Payments.

- IRAP-TPC will be administered to comply with government policies and regulations, and international obligations such as the World Trade Organization.

#### **REPAYMENT**

The following is a summary of repayment arrangements for IRAP-TPC:

- IRAP will be responsible for post-project follow-up and collection of any repayments resulting from contributions made under IRAP-TPC. Collections on repayable investments will be deposited into the consolidated revenue fund in the year of collection and accessed by TPC in the following fiscal year.
- IRAP's cost of administering repayments on IRAP-TPC projects will be netted out from those repayments.
- The amount of repayments collected will be recycled in the IRAP-TPC program.
- Following termination of this agreement, TPC will return to IRAP any unspent amount of the budget transferred by IRAP to TPC and will transfer to IRAP each fiscal year for use in IRAP, one half of the amount of net repayments collected in the prior fiscal year from contributions to IRAP-TPC projects made during the life of this MOU.

#### **REPORTING**

IRAP will report to TPC with a frequency and in a manner agreed upon by both parties consistent with the approach specified in Annex A to the MOU. The reporting arrangements specified in Annex A to the MOU may be amended by the mutual written consent of the Director General of IRAP and the TPC Director General, Operations.

#### **KEY RESULTS**

Since its inception in 1998 up to March 31, 2003, IRAP-TPC has invested over \$127.2 million in 342 projects with SMEs across Canada.

**IRAP-TPC REFERENCE LEVELS FOR THE PLANNING PERIOD<sup>a</sup>**

<b>Fiscal Year</b>	<b>Salary</b>	<b>EBP</b>	<b>Non-Salary</b>	<b>Total Operating<sup>a</sup></b>	<b>Contribution Budget</b>	<b>Total Budget<sup>a</sup></b>
2003-2004	1,187,500	237,500	575,000	2,000,000	31,000,000	33,000,000
2004-2005	1,187,500	237,500	575,000	2,000,000	28,000,000	30,000,000
2005-2006	1,187,500	237,500	575,000	2,000,000	28,000,000	30,000,000

<sup>a</sup> A Treasury Board submission is being prepared to increase the Program operating budget (including that of IRAP-TPC) effective 2003-2004. If approved, the budget figures presented above will change. Also, subject to approval, the reprofiling of funds lapsed in 2002-2003, would result in increases to annual contribution budgets over the planning period.

**FORECAST FOR 2003-2004**

IRAP-TPC expects to approve some 70 to 80 new projects in 2003-2004.



APPENDIX H

PERFORMANCE MEASURES

Guiding Principles	Performance Indicators	Targets for 2003-2004
LEVERAGE		
<p><b>1. Financially Innovative:</b> TPC projects are cost-shared, with the private sector bearing the majority of costs and the government sharing in upside returns on successful investments.</p>	<p>a. Weighted average (by value) TPC sharing ratio.</p> <p>b. Dollars of total innovation spending leveraged per dollar of TPC investment (see Note on next page)</p>	<p>a. Maximum of 33 percent.</p> <p>b. Minimum of \$3.50.</p>
<p>Note: Innovation spending includes:</p> <ul style="list-style-type: none"> <li>• <b>Eligible Supported Costs:</b> The company's share of project costs toward which TPC provides financial support.</li> <li>• <b>Other Project Related Costs (including post-work-phase investment):</b> Other non-recurring costs incurred in Canada that are directly related to the project. This includes items such as cost overruns but would not include costs prior to the date stipulated in the contribution agreement. For example, a project may include capital costs (for land and building) that are not eligible for TPC support, but which the company will incur directly related to the project. Post-work-phase investment refers to any additional non-recurring, post-work-phase, project-related investment in Canada by the company (e.g., non-recurring related to production facilities, marketing and distribution activities, etc.). For example, a company may have to build new production lines, or create a new marketing team, or establish a new distribution line/network for the resulting product/technology.</li> <li>• <b>Other Investment:</b> Other investment unrelated to the specific project but included in the contractual commitments made by the company. For example, a company may commit to construction of a building or laboratory as a condition of receiving a TPC investment, although the building is not directly part of the project.</li> </ul>		

Guiding Principles	Performance Indicators	Targets for 2003-2004
<p>Comments: LEVERAGE</p> <p><b>Performance Indicator 1.a:</b> TPC is obligated to manage the sharing ratios on its investments such that an overall weighted average program ratio of no more than 33 percent is achieved. Project sharing ratios will normally be between 25 and 30 percent of eligible costs, but in some exceptional cases may reach a maximum of 50 percent. Sharing ratios are negotiated on a case-by-case basis with a goal of providing only the minimum assistance required to induce the recipient to carry out the project and in accordance with Cabinet stacking policy. Accordingly, some volatility in results is anticipated as riskier projects will, understandably, require higher than average sharing ratios.</p> <p><b>Performance Indicator 1.b:</b> Considerable evidence exists that Canada suffers from an innovation gap – per capita R&amp;D spending is below that of other G8 nations. One of TPC’s objectives is to leverage as much other funding as possible for innovation spending. For projects, these funds will be applied to finance:</p> <ul style="list-style-type: none"> <li>• the balance of eligible project costs not provided by TPC (i.e., the reciprocal of the sharing ratio)</li> <li>• all ineligible project costs (e.g., land, buildings and initial production equipment)</li> <li>• all associated downstream investments (e.g., sustaining R&amp;D together with periodic investments in plant and equipment to accommodate increases in production rates or to replace worn assets).</li> </ul> <p>Production expenses such as labour, material, overhead costs are not investments for the purpose of measuring leverage.</p> <p>Some volatility is anticipated in this statistic due to, among other factors, the mix of project types present in TPC’s portfolio. Larger projects tend to have longer economic lives and hence proportionally higher levels of downstream investments.</p>		



Guiding Principles	Performance Indicators	Targets for 2003-2004
REPAYMENT		
<p><b>2. Fiscally Responsible:</b> TPC has implemented an investment approach whereby the government shares in the risks and rewards with repayment recycled to sustain and grow the fund.</p>	<p>a. Ratio of repayments collected in the fiscal year to disbursements in the fiscal year.</p> <p>b. Dollars of forecasted repayments per dollar of investment at time of approval not adjusted for risk.</p>	<p>a. Long-run target at program maturity is 50 percent.</p> <p>b. Between \$1.50 and \$2.00 for individual projects.</p>
<p>Comments: REPAYMENT</p> <p>TPC negotiates the terms of repayment on a case-by-case basis in order to respect the financial circumstances of each company. TPC's objective is to offer the company a package of terms that, when taken together, constitutes the minimum incentive required, and yields the maximum economic return, all the while contributing to its long run financial objective.</p> <p><b>Performance Indicator 2.a:</b> TPC's long-run financial target is to collect repayments at a rate of 50 percent of its contribution budget. In other words, assuming TPC's annual budget remains \$300 million per annum, repayments earned each fiscal year would need to amount to \$150 million. These funds would be available to be recycled into TPC, allowing potential for future growth. Since repayments for many of TPC's larger investments (which account for the clear majority of the agency's portfolio in dollar terms) are expected to occur over a 20- to 25-year planning horizon, steady-state is not anticipated until after the year 2015. Clearly in the short term, the ratio of repayments earned to disbursements is expected to be negligible.</p> <p><b>Performance Indicator 2.b:</b> A performance indicator for dollars of forecasted repayments per dollar of investment has been established to help evaluate the adequacy of repayment terms at the time an individual investment decision is taken. The target – between \$1.50 and \$2.00 – is based on an analysis of TPC's current portfolio and the weighted average cost of capital (WACC) observed in the private sector (which are an indicator of relative sectoral risk).</p>		

Guiding Principles	Performance Indicators	Targets for 2003-2004
<b>ECONOMIC BENEFITS</b>		
<p><b>3. Results Oriented:</b> TPC's investments are focussed on generating economic benefits for Canada, in particular high-quality jobs.</p>	<p>a. Average investment per job created and/or maintained during both the Work and Benefits Phases (total investment divided by the total number of projected jobs created and/or maintained).</p> <p>b. Distribution of jobs created and/or maintained by type of skills and by region.</p>	<p>a. Maximum of \$50,000.</p> <p>b. Not applicable.</p>
<p>Comments: ECONOMIC BENEFITS</p> <p><b>Performance Indicator 3.a:</b> At the core of TPC's mission is the objective to create or maintain long-term, high-quality jobs for Canadians. The average cost per job created or maintained is used to provide management and external parties with some sense of TPC's cost effectiveness. Also, to monitor job benefits to Canada, the level and quality of jobs created or maintained, together with some sense of the accuracy of the representations of companies with respect to the number of person years (PYs) they intend to create or maintain, are recorded in the contribution agreement.</p> <p><b>Performance Indicator 3.b:</b> The PY numbers in the contribution agreement are split both by type (i.e., knowledge based, sub-contracted, general production, marketing, sales and support, management and administration) and phase (i.e., Work versus Benefits). Moreover, companies are obligated to annually report on actual jobs created or maintained and to revise the previous forecast as required, which, on a cumulative basis for the portfolio, is monitored through this performance indicator.</p> <p>It is anticipated that performance indicators on jobs will exhibit considerable volatility, particularly during the early years of TPC's operations.</p> <p><b>Note:</b> To convert these data into jobs in an equitable fashion (recognizing that some projects are short-lived while others sustain employment opportunities that may run for 20 or more years) TPC has adopted a standard definition of a job. TPC defines total jobs created by a project as the average number of PYs over the duration of both the Work and Benefits Phases. For example, 15 PYs over three years of the Work Phase equals five jobs, plus 60 PYs over five years of the Benefits Phase equals 12 jobs, for a total of 17 jobs during the entire project. (A PY is defined as the equivalent of 1,950 hours of work paid in one year.)</p>		

Guiding Principles	Performance Indicators	Targets for 2003-2004
STRATEGIC BALANCE		
<p><b>4. Multi-sectoral:</b> TPC builds on areas of Canadian strength, including the aerospace and defence sector, environmental technologies and enabling technologies such as advanced manufacturing and processing technologies, advanced materials processes and applications, applications of biotechnology and applications of selected information technologies</p>	<p>Total dollar value of TPC investments split between E&amp;E technologies and A&amp;D</p>	<p>Ratio of one-third E&amp;E to two-thirds A&amp;D</p>
<p>Comments: STRATEGIC BALANCE</p> <p><b>Performance Indicator 4:</b> TPC is mandated to operate in a manner that funding is split one-third E&amp;E and two-thirds A&amp;D. While TPC's annual budget is notionally divided one-third : two-thirds, the distribution of actual disbursements within a FY period will demonstrate some volatility. This volatility arises because unspent monies in prior periods may have been carried forward or a decision may be made to move a portion of current year funds into the future to better match the supply and demand for funds. In addition, companies may request that TPC agree to the acceleration of project spending thereby bringing future year dollars into the present. Finally, in order to help with cash management, each component could conclude an arrangement whereby it temporarily borrows funds from the other – strictly on the basis that such funding be eventually returned. On this basis, the cumulative distribution should converge on the one-third : two-thirds target rapidly.</p> <p>Through its strategic balance and multi-sectoral approach, TPC supports the government's policy of sustainable development by helping to develop and deploy technologies that protect the environment while sustaining economic growth.</p>		

Guiding Principles	Performance Indicators	Targets for 2003-2004
<b>REGIONAL BALANCE</b>		
<p><b>5. National Coverage:</b> The TPC program is relevant to all regions of Canada and is consistent with the sectoral priorities of federal regional organizations.</p>	<p>The number and total value of investments split by regions – the West, Ontario, Québec and the Atlantic.</p>	<p>Not applicable.</p>
<p>Comments: REGIONAL BALANCE</p> <p><b>Performance Indicator 5:</b> No specific target is established. As TPC is demand-driven, regional data are collected for use by management for monitoring purposes only. However, consistent with good investment opportunities, the agency is sensitive to ensuring fair and equitable access for all regions of Canada.</p>		
<b>ACCESSIBLE TO SMEs</b>		
<p><b>6. Fair and Equitable Access:</b> TPC is committed to ensuring fair and open access to the program through delivery on a national basis, interdepartmental review of projects, special marketing initiatives and recognition of the challenges facing small companies.</p>	<p>Total distribution of TPC investments by value and number of projects between small and medium-sized enterprises (SMEs) and large firms.</p>	<p>Not applicable.</p>
<p>Comments: ACCESSIBLE TO SMEs</p> <p><b>Performance Indicator 6:</b> No specific target is established. As TPC is demand-driven, SME data are collected for use by management for monitoring purposes only. However, consistent with good investment opportunities, the agency is sensitive to ensuring fair and equitable access for all sizes of firms, including SMEs. For the TPC program, an SME is defined as a firm with 500 or fewer employees.</p> <p>TPC has undertaken a number of initiatives designed to enhance the agency's support to SMEs, including:</p> <ul style="list-style-type: none"> <li>• The IRAP-TPC Initiative, with an annual \$30 million notional budget, targets SMEs seeking assistance for projects with \$3 million or less of eligible costs.</li> <li>• The Aerospace and Defence (A&amp;D) Supplier Development Initiative (SDI), with an annual \$30 million notional budget, invests in Canadian aerospace SMEs so they can undertake significant enhancements to their manufacturing and management systems. For the SDI initiative, an SME is defined as a firm with 200 or fewer employees.</li> <li>• The Canadian Aerospace Collaborative Technology Development Initiative, with an annual \$3 million notional budget, invests to encourage early stage R&amp;D collaboration in the Canadian A&amp;D sector, especially with SMEs.</li> </ul>		

Guiding Principles	Performance Indicators	Targets for 2003-2004
<b>PARTNERSHIPS</b>		
<p><b>7. Based on Collaboration:</b>                      TPC's operations and investment strategies are guided by government priorities and industry strategies, structured to be complementary to existing programs, coordinated by an interdepartmental committee and overseen by a private sector based advisory board.</p>	<p>The extent to which TPC consults with its operating partners.</p>	<p>a. Convene the TPC Advisory Board at least twice yearly.</p> <p>b. Conduct quarterly meetings of the Inter-departmental Advisory Committee (IAC).</p> <p>c. Hold meetings of the TPC Management Board weekly, or on an as required basis.</p> <p>d. At least once per year, meet with and brief the major industry associations within the A&amp;D and E&amp;E components.</p>
<p>Comments: PARTNERSHIPS</p> <p><b>Performance Indicator 7:</b></p> <ul style="list-style-type: none"> <li>• In addition to the specific targets established for this performance indicator, TPC conducts ongoing, meaningful consultations with the Industry Sector Branches of IC and other portfolio partners.</li> <li>• Copies of all potential investments are forwarded for review and comment to members of both the IAC and TPC Management Board (including Industry Canada branch representatives who are invited to attend TPC Management Board meetings).</li> <li>• Although IAC members may attend Management Board, any IAC member can call a special meeting to discuss a specific potential investment.</li> </ul>		

Guiding Principles	Performance Indicators	Targets for 2003-2004
<b>ACCOUNTABILITY</b>		
<p><b>8. Accountable:</b> TPC is accountable for program performance to the Minister of its parent department, Industry Canada and its clients.</p>	<p>Program and client accountability targets established by TPC and agreed to by its parent department.</p>	<p>Program Accountability:</p> <ul style="list-style-type: none"> <li>• Executive Director of TPC reports directly to the Associate Deputy Minister of Industry Canada.</li> <li>• TPC's Annual Report is tabled in Parliament, thereby placing TPC's performance and results in the public domain.</li> <li>• All investments greater than \$500,000 are tabled at Industry Canada's Programs and Services Board (PSB), thereby subjecting them to further detailed scrutiny outside of TPC.</li> </ul> <p>Client Accountability:</p> <ul style="list-style-type: none"> <li>• TPC's Service Standards</li> </ul>
<p>Comments: ACCOUNTABILITY</p> <p><b>Performance Indicator 8:</b></p> <ul style="list-style-type: none"> <li>• All TPC investments greater than \$500,000 are subjected to detailed scrutiny outside of TPC by members of PSB, outside evaluators, members of IAC and sector branch representatives on the TPC Management Board.</li> <li>• TPC's performance with respect to client accountability is primarily measured using the agency's service standards (see details at paragraph 14.3 of this Business Plan).</li> </ul>		







Priority 1: Public Relations, Marketing and Communications				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
<p>(Cont'd) Using an approach involving multiple and concurrent activities, implement a Public Relations, Marketing and Communications Strategy that addresses multiple audiences, including:</p> <p>(A) Member Publics (e.g. clients and potential clients)</p> <p>(B) Government Publics (e.g. Ministers office, IC sectors, central agencies, OGDs, Parliamentarians)</p> <p>(C) Community Publics (e.g. regions, academia, Industry Associations)</p> <p>(D) Media Publics (e.g. National and Regional)</p> <p>(E) Employee Publics (e.g. IC and Regions)</p> <p>(F) Special Publics (e.g. NRTEE, AIAC, CHIR, provincial governments)</p>	<p>Deliver an Outreach Strategy.</p>	<p>30 June, 2003</p>	<p>The extent to which the understanding of the TPC program is enhanced. (To be determined through a feedback mechanism.)</p>	<p>Kathryn Bruce (C) Dan McCarthy</p>
	<p>Presentation to Parliamentary Committee on Industry, Science and Technology on TPC outreach.</p>	<p>End May, 2003: Meeting with committee End June, 2003: Agreement on actions to be taken throughout the year</p>	<p>Increased knowledge of the TPC program by Mps. Increased number of announcements of TPC investments with MP participation. Number of queries about TPC received in constituency offices and referrals to Regional Officers.</p>	<p>Nicole Loreto (C) Dan McCarthy (C) <u>Action Team:</u> TPC Management Team (as required)</p>
	<p>Outreach and communications input to the report to Cabinet in the Fall of 2003 on the repositioning of TPC. (Linked to Priority 4: Support to Key Government Priorities.)</p>	<p>30 September, 2003</p>	<p>Cabinet's response to the outreach and communications portions of the MC. (To be determined through feedback from PCO and the RD for the MC.)</p>	<p>Nicole Loreto (C) <u>Action Team:</u> Kathryn Bruce John Brunet Dan McCarthy Sue Hart Simon Brault</p>

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Priority 1: Public Relations, Marketing and Communications				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
<p>(Cont'd) Using an approach involving multiple and concurrent activities, implement a Public Relations, Marketing and Communications Strategy that addresses multiple audiences, including:</p> <p>(A) Member Publics (e.g. clients and potential clients)</p> <p>(B) Government Publics (e.g. Ministers office, IC sectors, central agencies, OGDs, Parliamentarians)</p> <p>(C) Community Publics (e.g. regions, academia, Industry Associations)</p> <p>(D) Media Publics (e.g. National and Regional)</p> <p>(E) Employee Publics (e.g. IC and Regions)</p> <p>(F) Special Publics (e.g. NRTEE, AIAC, CHIR, provincial governments)</p>	<p>Production of TPC's Annual Report for 2002-2003.</p>	<p>End June, 2003: Draft report</p> <p>August, 2003: Report to Minister</p> <p>End September, 2003 (tentative): Report tabled in the House of Commons</p>	<p>The extent to which the report accurately reflects TPC's activities and furthers the understanding of the program by multiple audiences. (To be determined through a feedback mechanism.)</p>	<p>Nicole Loreto (C) <u>Action Team:</u> All Directors</p>
	<p>Production of fact sheets on the key elements and benefits of the TPC program.</p>	<p>15 June, 2003</p>	<p>The extent to which the fact sheets further the understanding of TPC by multiple audiences. (To be determined through a feedback mechanism.)</p>	<p>Nicole Loreto (C) <u>Action Team</u> Michael Lenihan Kash Ram Jacques Cloutier Simon Brault</p>

Priority 2: Responsible Financial Management				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
Implement an improved financial monitoring and reporting process	Facilitation meetings on operating and contribution budgets.	First meeting in May and then August and every month thereafter	The extent to which meetings assist officers and contribute to an efficient monitoring and reporting process.	Francois Martel (C) <u>Action Team:</u> All Directors and officers responsible for budget monitoring
	Timely reporting from directorates on their contribution cash flows and their operating (salary and O&M) financial status and plans to PSD.	During the last 3 days of every month starting in August. More frequently during the last quarter of the fiscal year.	The extent to which reporting is timely with up to date forecasts.	John Brunet (C) - contribution budget Kathryn Bruce (C) - operating budget <u>Action Team:</u> All Directors Francois Martel
	Quarterly management strategic meetings and other financial update briefings, including a mid-year review of deliverables, plan, priorities and financial status and make appropriate course corrections.	June, September, December and February	The extent to which quarterly meetings:  - contribute to an effective financial management process; - inform management; and - allow for issues to be raised and addressed.	Kathryn Bruce (C) Sue Hart (C) <u>Action Team:</u> All Directors Francois Martel

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Priority 2: Responsible Financial Management				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
Embark on an extensive outreach program to inform publics of the rigorous processes and context of financial management within TPC.	Institute an educational process for new and existing clients through an annual letter clearly stating the importance of the company providing accurate forecasts of claims for the fiscal year. The letter, which will identify the current forecast on TPC's project file, will be released under the Executive Director's signature.	30 June, 2003	The extent to which the accuracy of company forecasts improve over time. (To be determined through ongoing statistical review over succeeding fiscal years.)	Kash Ram (C)
	Brief central agencies and key departmental senior management on a quarterly basis.	30 August, 2003: development of briefing material September, 2003: commence briefings	The extent to which briefings contribute to a better understanding of the processes and context of financial management within TPC. (To be determined through a feedback mechanism.)	Kathryn Bruce (C) John Brunet (C)

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Priority 2: Responsible Financial Management				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
Approval and implementation of comprehensive TPC policies on Repayments and Warrants that meet all government-wide and departmental policy requirements and procedural guidelines.	TPC Repayment Policy	End May, 2003	The extent to which the Repayment Policy contributes to the effective and efficient achievement of repayments within TPC. (To be determined through a feedback mechanism and statistical analysis.)	Simon Brault (C)
	TPC Warrant Policy	End September, 2003	The extent to which the Warrant Policy effectively guides the use and management of warrants within TPC. (To be determined through a feedback mechanism and statistical analysis.)	Simon Brault (C)

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Priority 3: Resourcing for Today and Tomorrow				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
Obtain TB approval for increased program administration funding.	TB Submission	Submission tabled at TB during June, 2003	Increased level of program administration funding approved by TB.	Sue Hart (C) <i>Action Team:</i> Francois Martel
Implement a comprehensive Human Resources (HR) Strategy that deals effectively with a wide range of HR key issues and is designed to make TPC an employer of choice.	Completion of classification and staffing actions for new and vacant positions (within a priority system that identifies key positions to be filled initially).	Ongoing throughout 2003-2004	Number of positions successfully classified and staffed.	Sue Hart (C) (maintaining priority system and providing HR expertise/advice) Directors/ Managers (completing HR actions)
	Complete a career plan, with a current year training plan, for each employee.	30 June, 2003	All career plans completed by established deadline.	Directors/ Managers
	Develop an employment equity (EE) and diversity plan for TPC that meets government-wide policy requirements and follows the guidance provided in Industry Canada's PMP.	30 June, 2003	The extent to which EE and diversity are integrated into TPC's staffing actions.	Sue Hart (C) (develop plan) Directors/ Managers (implement plan)

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Priority 3: Resourcing for Today and Tomorrow				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
(Cont'd) Implement a comprehensive Human Resources (HR) Strategy that deals effectively with a wide range of HR key issues and is designed to make TPC an employer of choice.	Develop and implement an orientation package for new employees.	30 November, 2003	Number of employees given orientation training. Success of package in helping new employees settle into TPC. (To be determined through a feedback mechanism.)	Sue Hart (C) Kash Ram
	Develop a recognition framework and related activities for TPC that fall within government-wide and departmental guidelines.	30 November, 2003	Impact of recognition on employee morale. (To be determined through a feedback mechanism.)	Sue Hart (C) (develop and manage framework) Directors/ Managers (implement framework)
Manage existing office space as effectively as possible and works toward the consolidation of all TPC personnel in a single location.	Manage TPC's accommodation requirements	Ongoing	Provision of adequate interim accommodation for TPC's growing work force. Concrete steps made towards consolidation.	Sue Hart (C)

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Priority 4: Support to Key Government Priorities				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
Respond to Budget 2003 reference to TPC regarding how the program could enhance its support to Climate Change within existing resource levels.	Develop options, including a permanent budget reallocation, designed to increase TPC's already substantial ongoing support to Climate Change.	26 May, 2003	The extent to which: – the options put forth by TPC are accepted by decision makers; and – TPC's support to Climate Change is enhanced.	Kathryn Bruce (C) <u>Action Team:</u> Dan McCarthy Kash Ram Sue Hart Francois Martel
Maximize the opportunity for TPC to access additional funds that are earmarked for Climate Change in Budget 2003.	TPC Investment Strategy for Climate Change	1 July, 2003	TPC's success in securing additional funding for Climate Change.	Kathryn Bruce (C) <u>Action Team:</u> Kash Ram Dan McCarthy
Report to Cabinet in the Fall of 2003 on the repositioning of TPC.	Memorandum to Cabinet (MC)	30 September, 2003: Draft MC November, 2003: MC tabled at CCEU	Cabinet's response to the positive recommendations put forth by TPC in the MC.	Kathryn Bruce (C) <u>Action Team:</u> TPC Management Team (as required)



Priority 4: Support to Key Government Priorities				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
<p>Develop a submission to take to TB by January, 2004 responding to decision T.B. 830429 of March 20, 2003, in particular addressing requirements to:</p> <p>– report on the findings of the audit and evaluation conducted during 2003, including how TPC proposes to respond to any concerns that may arise from these findings; and</p>	<p>TB Submission</p> <p>Consolidate findings of the audit and evaluation and draft TPC's response.</p>	<p>1 November, 2003: draft submission January, 2004: table submission at TB</p> <p>1 September, 2003</p>	<p>The TB Submission is drafted, processed and tabled at TB by the end of January, 2004.</p> <p>The extent to which TB accepts the proposed response to the findings put forth by TPC.</p>	<p>Dan McCarthy (C)</p> <p>Sue Hart (C) (audit) Robert Renaud (C) (audit) Simon Brault (C) (evaluation) <u>Action Team:</u> TPC Management Team</p>

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Priority 4: Support to Key Government Priorities				
Key Activities	Deliverables	Milestones	Performance Measures and Indicators	Champion (C)/ Action Team
<ul style="list-style-type: none"> <li>- respond to Ministers' observations on TPC's reporting on program management and results, in particular:                             <ul style="list-style-type: none"> <li>• tracking and reporting on program results to identify the impact of its investments on the wealth and well-being of Canadians;</li> </ul> </li> </ul>	Identify performance measures for Tier II program results.	1 October, 2003	The extent to which TB accepts TPC's efforts to identify the impact of Tier II program results.	Simon Brault (C)
<ul style="list-style-type: none"> <li>• making evident its efforts to risk manage its portfolio of investments; and</li> </ul>	Identify TPC's achievements in risk management to date and the Agency's ongoing efforts to strengthen its performance in this area.	1 October, 2003	The extent to which TB accepts TPC's efforts in risk management.	Simon Brault (C)
<ul style="list-style-type: none"> <li>• effectively communicating messages to manage expectations around repayments.</li> </ul>	Strengthen TPC's communications with respect to repayments.	1 October, 2003	The extent to which TB accepts TPC's communications efforts regarding repayments.	Nicole Loreto (C) Robert Renaud

