Western Economic Diversification Canada | Diversification de l'économie de l'Ouest Canada

Industry Report on the Western Canada Environmental Technology Sector

Prepared by:

GLOBE foundation OF CANADA

On behalf of the:

Western Canadian Environmental Technology Industry

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Executive Summary

At the December 2003 Environmental Technologies Forum in Vancouver, Prime Minister-designate Paul Martin acknowledged the importance of environmental technology and spoke of its enormous potential to help avert global ecological problems as the developing world industrializes.

He challenged participants to bring him a few concrete proposals to realize this potential, and linked environmental technology to other priorities planned for his government relating to cities, infrastructure renewal, healthcare, energy, and First Nations.

At the Forum and on other occasions, the Prime Minister articulated his desire to re-align governmental policies and incentives in order to advance Canada to a position of leadership in the fields of renewable energy, resource efficiency and conservation. He put forward a vision of Canada as a world leader in developing and applying leading-edge environmental technologies and expressed a willingness to do whatever was necessary to make the environmental sector a major force in the Canadian economy.

His challenge generated an extended process of dialogue and consultation with industry groups and other stakeholders across Western Canada. Using the Forum's conclusions as a basis for discussion, roundtables and surveys were used to gauge the needs and desires of the sector, and to distil these into actionable recommendations. This Report is the culmination of that process.

In summary, the environmental technology sector identified three key recommendations as first priorities to enable Western Canada to make a meaningful contribution to Mr Martin's vision of a more 'Sustainable Canada'.

- Provide support for demonstration projects;
- Adopt regulatory regimes that encourage the development and deployment of innovative environmental technologies; and
- Implement fiscal incentives to promote the early adoption of new environmental technologies.

Significant endorsement was also expressed by the industry for the adoption of green procurement policies for government.

While there was a great deal of support expressed for the Prime Minister's vision of a sustainable Canada, many of the industry leaders consulted were concerned about the state of their sector (see Appendix II).

Most regarded their own company's fortunes favourably, but in general terms industry respondents had lukewarm views about the state of the environmental technology sector, ranking current prospects only as "fair".

These results are not surprising. Other studies of the Canadian environmental business sector have reached similar conclusions. Firms in this sector tend to be small to medium sized enterprises providing specialized expertise, technologies and services to clients in business and government. They are fully occupied servicing domestic market demands despite the vast potential of the international market for environmental goods and services.

Though companies in the sector are anxious to expand, they lack the financial resources or managerial capacity to engage in extensive technology development or market expansion activities. While many are noted for the high quality of their technologies and expertise, few actually produce environmental goods or products for the export market.

The December 2003 Environmental Technologies Forum and the consultative process that followed provided an excellent opportunity to develop clear and precise recommendations on how the federal government can work with the industry to overcome these constraining factors.

The recommendations put forward herein are intended to guide the government in its efforts to create a more sustainable Canada and to help the western Canadian environmental sector to better coordinate its contributions to that process. Their focus is simple and straight forward: demonstration, regulation, and innovation!

In order of priority, the western Canadian environmental technologies industry recommends the following:

<u>First Priority: Demonstration Projects</u>

1. In partnership with industry, the federal government should support a series of demonstration projects that showcase environmental technologies and expertise available in Western Canada and to promote their early adoption - both at home and abroad.

Comments: Industry stakeholders believe demonstration projects are an effective way to showcase Canadian excellence in all environment related sectors and to build new markets. Western Canada has much to offer the world in terms of innovative technologies and sustainability solutions related to energy, forestry, agriculture, water/wastewater, contaminated site remediation, sustainable cities, and in climate change-related areas. Stakeholders identified the 2006 World Urban Forum in Vancouver and the 2010 Olympic Games in Vancouver and Whistler as just two events where western Canadian demonstration projects could be highlighted.

By working together within the context of a long-term and transparent Technology Demonstration Project program, industry, the research community, and key government agencies can develop and showcase real world solutions to pressing environmental problems.

Second Priority: Smart Regulation

2. The federal government should develop regulatory regimes that promote the development and early adoption of environmental technologies and sustainability solutions across Western Canada.

Comments: It is recognized that the environmental technology sector in large part is shaped by regulatory regimes at the local, provincial and national levels. Industry stakeholders believe that regulation is a shared responsibility in which governments, citizens and industry all have active roles to play. Smart regulatory systems can generate social and environmental benefits, and help create a competitive and innovative economy that is attractive to investors and skilled workers.

By making regulation as effective as possible and allowing more flexibility in terms of how results are achieved, these regimes can provide an enormous incentive to the development and early adoption of innovative western Canadian technologies and solutions.

Smart regulation could include revising and updating federal government regulations to remove barriers and impediments to innovation, and increasing incentives for the application of new environmental technologies and encouraging similar changes in provincial and municipal government regulatory regimes.

Third Priority: Fiscal Incentives

3. Working closely with the business community, the federal government should introduce fiscal and other funding measures to promote capital investment in innovative environmental and clean technologies similar in scope to the Innovation and Productivity Tax Credit program this is being recommended by the National Research Council and that has proven successful in British Columbia in providing early stage funding.

Comments: While the recommendation is clear, its implementation will require considerable effort and time to implement. Fiscal incentives such as provincial R&D tax credits, renewable energy incentives etc., and other measures must be examined to determine their overall economic impact and technology development potential.

In addition to these three priorities, industry stakeholders also believe the federal government's purchasing power can be an effective tool to stimulate the early adoption of environmentally sound and energy efficient products, services and technologies. To this end the federal government is encouraged to move quickly to implement the stated commitment to make green procurement a reality for the purchase of goods and services by federal departments and agencies. This commitment would also include Leadership in Energy and Environmental Design (LEED) standards (or equivalents as relevant) for all new construction where federal funding is involved.

In the broader context, there was considerable support within the industry for the Prime Minister's vision to develop and apply advances in environmental technology to create a more sustainable Canada, to build globally competitive firms, and to attract capital and entrepreneurs from around the world. Achieving this vision will involve pursuit of the thirteen initiatives outlined by the Minister of the Environment in his response to the Speech from the Throne (See Box below).

Stakeholders in all western provinces were clear in their willingness to work with the federal government to achieve this vision and to pursue the 13 initiatives as outlined by the Minister of the Environment.

The consultative process leading to the above recommendations involved industry roundtables and on-line surveys managed by Western Economic Diversification Canada. This approach was used to broaden the basis of industry viewpoints in formulating recommendations for the Prime Minister.

It is believed that similar industry-led consultative mechanisms will be required to facilitate government-industry partnerships to implement the chosen recommendations and to pursue the 13 initiatives outlined below.

Finally it is worth noting that this Report draws heavily upon studies undertaken preparatory to the Environmental Technologies Forum; working papers prepared in the course of post-Forum stakeholder consultations across the West, and the findings of a pan-western on-line survey conducted by the Ipsos-Reid Corporation (see Appendix I). This Report was prepared the GLOBE Foundation of Canada, which has been an active participant in all phases of this endeavour.

However, it is crucial to note this document is not a GLOBE Foundation or an Ipsos-Reid Report. Rather it is an expression of concerns, ideas and recommendations of hundreds of concerned Canadians across the West who wish to make the western Canadian environmental technology sector a strong and vibrant contributor to a Sustainable Canada and to sustainability in the global context.

Thirteen initiatives to make Canada's environment healthier and economy stronger

1. The Government will work with its partners to build sustainable development systematically into decision making.

2. The Government will work with the private sector to improve the commercialization of the best new environmental technologies. Major investments funded out of the proceeds of the sale of the Government's Petro-Canada shares will support the development and deployment of these technologies.

3. The Government will consolidate federal environmental assessments and will work with the provinces and territories toward a unified and more effective assessment process for Canada.

4. By 2006, the Government will implement a new Green Procurement Policy to govern its purchases.

5. The Government will introduce legislation that will strengthen the focus on the ecological integrity of Canada's national parks.

6. The Government will place increased focus on energy.

7. The government will support wind-power production, stimulated by a quadrupling of the Wind Power Production Incentive.

8. The Government will refine and implement a national plan for climate change, in partnership with provincial and territorial governments and other stakeholders.

9. The Government will work with the United States and agencies like the International Joint Commission on issues such as air, water and invasive species.

10. The Government will bring forward the next generation of its Great Lakes and Saint-Lawrence programs.

11. The government will move forward on its Oceans Action Plan.

12. Through the New Deal for Canada's Cities and Communities, the Government will enable municipalities to make long-term financial commitments needed to help contain urban sprawl and to invest in new sustainable infrastructure projects.

13. The Government will develop a comprehensive strategy for the North that will protect the northern environment.

Extracted from Speaking Notes for The Honourable Stéphane Dion, P.C., M.P. Minister of the Environment, Response to the Speech from the Throne, House of Commons Ottawa, October 19, 2004

Industry Report on the Western Canada Environmental Technology Sector

Introduction

> *"Over the course of the next generation, China and India are going to become massive economic superpowers, and in fact, if they do so in the way we became strong economies, then the cost to nature and the cost to the planet are simply going to be catastrophic. The development of new technologies, much of which I hope comes from [Western Canada], is going to be absolutely key."*

With these words, Prime Minister-designate Paul Martin opened a dialogue involving over 130 leaders of western Canadian businesses as well as academic, not-for-profit and government organizations on the development, commercialization and adoption of western Canadian environmental technologies.

The Western Canadian Environmental Technology Forum, hosted by the Western Economic Diversification Canada on December 5, 2003 in Vancouver, was a pivotal point in an extended review of the strengths, weaknesses and opportunities associated with this emerging sector. It was also a key step in moving Canada forward as an environmentally and socially sustainable economy.

Mr. Martin spoke of the important role of innovative technology in stimulating economic development and in helping to deal with social and health problems. He specifically referenced unacceptable conditions in many aboriginal communities, and his commitment for a new deal for Canada's cities. He signalled his personal commitment to make Canada a world leader in the delivery of sustainable environmental solutions, a commitment repeated in the months that followed in two Speeches from the Throne and in the March 2004 federal budget.

In his closing remarks, Mr. Martin challenged Forum delegates to come forward with a few clear, precise signals as to how government can help stimulate the industry. "Come to us with concrete suggestions," said Mr. Martin, not vague proposals or endless shopping lists.

His challenge generated an extended process of dialogue and consultation with industry groups and other stakeholders across Western Canada that spanned several months. Using conclusions drawn from the Forum as a basis for discussion, working groups, roundtables and an extensive on-line survey took place to accurately gauge the needs and desires of key players in the sector, and to distil these into actionable recommendations to the government.

Three top recommendations were identified and validated by representatives of the environmental technology sector. These are, in order of priority:

1. In partnership with industry, the federal government should support a series of demonstration projects that showcase environmental technologies and expertise available in Western Canada and to promote their early adoption - both at home and abroad.

2. The federal government should develop regulatory regimes that promote the development and early adoption of environmental technologies and sustainability solutions across Western Canada.

3. Working closely with the business community, the federal government should introduce fiscal and other funding measures to promote capital investment in innovative environmental and clean technologies similar in scope to the Innovation and Productivity Tax Credit program that is recommended by the National Research Council and that has proven successful in British Columbia in providing early stage funding.

In addition to these three priorities, industry stakeholders also believe the federal government's purchasing power can be an effective tool to stimulate the early adoption of environmentally sound and energy efficient products, services and technologies. To this end the federal government is encouraged to move quickly to implement its stated commitment to make sustainable procurement a reality for the purchase of goods and services by federal departments and agencies. This commitment would also include Leadership in Energy and Environmental Design (LEED) standards (or equivalents as relevant) for all new construction where federal funding is involved.

In full recognition of the Prime Minister's admonishment to avoid vague proposals or wish lists, the Report that follows elaborates upon these summary statements and fashions them into concrete, actionable recommendations. It does so with the authority of an extensive and comprehensive validation process involving stakeholders from across the West united in their conviction that Western Canada can make a difference in terms of providing innovative environmental solutions for a world much in need of help.

While the observations and recommendations in the attached Report are based on consultations and surveys in Western Canada, it is recognized that many have broader implications and may require actions by the federal government that are national in scope. For this reason, certain of the proposed action recommendations have been crafted to fit into the broader thirteen point agenda the government has already defined as the roadmap for a more sustainable Canada.

As the Prime Minister noted at the Environmental Technologies Forum, "the government can't pick winners in industry, but government has a responsibility to pick winning industries".

As evidenced in the Report that follows, Western Canada has the credentials and a plan to be part of a winning environmental technology industry.

Finally it is worth noting that this Report draws heavily upon studies undertaken preparatory to the Environmental Technologies Forum; working papers prepared in the course of post-Forum stakeholder consultations across the West, and the findings of a pan-western on-line survey conducted by the Ipsos-Reid Corporation (see Appendix I). This Report was prepared the GLOBE Foundation of Canada, which has been an active participant in all phases of this endeavour.

However, it is crucial to note this document is not a GLOBE Foundation or an Ipsos-Reid Report. Rather it is an expression of concerns, ideas and recommendations of hundreds of concerned Canadians across the West who wish to make the western Canadian environmental technology sector a strong and vibrant contributor to a Sustainable Canada and to sustainability in the global context.

Background

In December 2003, Western Economic Diversification Canada held the Environmental Technologies Forum in Vancouver to help advance growth of the sector across Western Canada. At the Forum, Prime Minister-designate Paul Martin challenged participants to come forward with a new vision for partnerships between industry and government and asked for a few concrete proposals to advance the environmental technology sector.

A number of recommendations emerged from the day of discussion, including:

- Harmonized regulatory and program support mechanisms across all levels of government;
- Better market intelligence and assistance in bringing Canadian environmental products and solutions to markets with significant business potential;

- Fiscal incentives to promote investment in the sector and to encourage the adoption of these technologies in their earliest stages of commercialization;
- Centres of Excellence to foster development and commercialization of environmental technologies, products and services; and
- Demonstration projects to showcase Western Canada's innovative environmental solutions.

It was recognized, at the Forum, that the environmental technologies sector faced a number of challenges. Studies commissioned preparatory to the Forum revealed that the sector is highly fragmented, dominated by small enterprises servicing local markets driven by government regulation.

Many international and domestic market opportunities exist, but few are realized. Most firms in the sector lack the money, managerial capacity or staying power needed for extensive technology development or international market expansion activities. Concerns about an apparent lack of coordination and coherence among government programs designed to assist the sector, and the lack of a strong industry association either at the national or regional level further diminished the capacity of the sector to grow.

Recognizing these concerns, as well as the need to provide a coherent and orderly framework wherein which the recommendations generated by the Environmental Technologies Forum could be implemented, a series of follow-on workshops and roundtables involving industry groups took place across Western Canada.

Implementing the Recommendations

While the above-noted recommendations were based on consultations and surveys in Western Canada, it is recognized that many have broader implications and may require actions by the federal government that are national in scope. For this reason, certain of the proposed action recommendations which appear in the pages that follow have been crafted to fit into the broader thirteen point agenda the government has already defined for attainment of a more sustainable Canada.

The western Canadian stakeholders consulted throughout this process were adamant that the action oriented strategies that might emerge from this Report must be reflective of the collaborative approach between business and government that has been demonstrated so ably before, during and after the Environmental Technologies Forum. For this reason, certain of the recommendations that follow are crafted to help provide suitable vehicles for industry participation in the development and implementation of new policies and programs.

In order of priority, the top recommendations chosen by representatives of the western Canadian environmental technology sector are:

- Provide support for demonstration projects;
- Adopt regulatory regimes that encourage the development and deployment of innovative environmental technologies; and
- Implement fiscal incentives to promote the early adoption of new environmental technologies.

Each is discussed in more detail below.

First Choice: Demonstration Projects

> **Recommendation**: The Government of Canada should provide support for and fund demonstration projects. This would mean providing the necessary financial and regulatory frameworks to assist in the development of specific projects that can be used to test and showcase environmental technology products and solutions, which can be used to improve the quality of life in cities and communities in Canada and elsewhere.

The Final Report on the western Canadian Environment Industry (December 2003) recommended a program to support demonstration projects, particularly involving large scale, real-world urban showcase sites. In this way, western Canadian environmental technologies, products and services could be tested, verified and displayed in order to attract new national and international customers and to foster their adoption by local industries and municipalities. This concept was discussed at length at subsequent stakeholder consultations in each region and was seen as a high priority issue everywhere.

For example, Manitoba stakeholders noted during one of the consultation roundtables that demonstration projects provided a double benefit as they enabled the testing of concepts or bench scale operations and also provided a track record of operation, which is critical for companies seeking to sell their products and services in the export market. Stakeholders in Calgary called for greater government financing for pilot and demonstration projects to address a critical failure with respect to new technologies developed in Alberta, namely the lack of early adopters in the private sector and first purchasers in the public sector.

British Columbia stakeholders were outspoken on the need for government financial support for demonstration projects focusing on environmental solutions, with particular emphasis on projects relating to energy, materials, and water

sustainability requirements of the 2010 Olympics and infrastructure projects in receipt of federal funding.

Many stakeholders felt there was no need for 'new' program dollars targeting demonstration projects, although governments might have to fund risk premiums associated with the adoption of new and sustainable technologies. One example cited was the Sydney Olympic Games, where athlete villages were powered by solar energy, with government underwriting of the premium of incremental costs, as well as providing relief from regulatory risks.

There was mixed opinion among stakeholders, however, as to how such projects should be chosen and funded. While most argued such projects were essential to showcase western Canadian environmental excellence, others noted that funding demonstration projects on an ad hoc basis was not advisable.

Concerns were expressed that isolated demonstration sites or facilities would be 'half measures' that would fail to change industry practices or to attract new customers. Others argued government funding for demonstration projects be used only to reduce the risks associated with technology development and early stage adoption; to build on proven strengths; to create an environment for collaboration; or to provide real-world incentives for governments and industry practitioners to change their ways of doing business.

In general, it was suggested that the most effective approach to demonstration projects was to support projects that encouraged the formation of partnerships between governments and industry; that removed impediments to innovation; that encouraged the private sector to provide the technologies and expertise needed to solve real world problems; and that created a climate of innovation and experimentation. This is one of the reasons why the 2010 Olympic Games was cited as an opportunity to showcase western Canadian products, services, and technologies related to sustainable urban environments planning and green building.

Several respondents suggested that more real-world demonstration projects would result if governments at all levels simply inserted "green" specifications into bid documents and helped in marketing and promoting success stories in the construction sector. In this way, individual firms would become more involved in the process of technology development and commercialization and would see themselves as part of the sustainability solution. The added benefit of such an approach is that it links neatly into the context of other federal priorities, namely the "New Deal" for Canada's cities and communities and the commitment to improve quality of life in First Nations communities.

Respondents noted there is ample scope for funding of demonstration projects within the government's Budget commitment to provide $800 million over the next seven years to support emerging environmental technologies. Indeed, many of the thirteen priorities the federal government has identified as crucial in creating the sustainable economy provide scope for demonstration projects.

Second Choice: Regulatory Regimes

> **Recommendation**: The Government of Canada should adopt regulatory regimes that encourage the development of environmental technologies. This could include revising and updating federal government regulations to remove barriers and impediments to innovation, and to increase incentives for the application of new environmental technologies. This would also mean encouraging similar changes in provincial and municipal government regulatory regimes.

As was noted in the working papers leading to the Environmental Technologies Forum, firms in the environment sector provide expertise, technologies and services to other companies in the resource, energy and agricultural sectors, to municipal and provincial agencies, and to a variety of other clients in the health, education and social services sectors. Local and other government spending relates largely to waste management and water treatment facilities and services, air pollution control, monitoring and assessment, livestock pollution, health and hygiene issues, and hazardous waste remediation.

All of these client groups involve end-users that in turn are operating under a wide array of federal, provincial and municipal regulatory regimes and guidelines that vary significantly by jurisdiction and by sector. Changes to regulations governing any industry or sub-sector can have enormous implications for the providers of environmental goods and services. Regulatory regimes that are cumbersome or complicated to implement, or which are difficult to change can have a dampening effect on risk taking through the adoption of new performance-based solutions or technologies.

Opinions are varied on the need for regulations. Typically, product and services providers are more comfortable with regulatory regimes that provide a level of security and predictability. End users, on the other hand, tend to regard regulations as impediments to business that should be kept to a bare minimum.

These facts were very evident in consultations with industry groups before, during and after the Environmental Technologies Forum. British Columbia discussion groups ranked regulation as a means of building the domestic market highly. They called for a greater 'sustainability focus' in government regulatory regimes; the removal of barriers and impediments created by rigid adherence to standards; and an increase in performance based incentives for the application of new environmental technologies.

Alberta stakeholders also called for regulatory changes and harmonization, beginning with building codes in order to force changes in the housing and construction industry and to respond to shifting public attitudes.

As one respondent to the Ipsos-Reid survey noted: "Require industry to be eco-efficient using smart regulations that are outcome based and require industry to measure and publicly report on their environmental performance."

This call for smart regulation is timely. As noted in final report to the Government of Canada by the *External Advisory Committee on Smart Regulation* (September 2004) Canadians see social, environmental and economic goals as intertwined. They believe that governments are ultimately responsible for the health and safety of citizens and the protection of the environment, but they can be flexible in how these objectives are attained, as long as they remain accountable for results.

As defined by the Committee, Smart Regulation is both protecting and enabling. It involves using the regulatory system to generate social and environmental benefits while enhancing the conditions for a competitive and innovative economy that will attract investment and skilled workers and sustain a high quality of life for Canadians. It is about making regulation as effective as possible — and making sure it is never more complicated or costly than it has to be.

> *Smart Regulation is more responsive regulation.* An effective regulatory system must be self-renewing and keep up with developments in science, technology and global markets. Smart Regulation is acting quickly and deliberately to contain or prevent risks and enable innovation and opportunity so that Canadians receive the benefits of new knowledge. This also means giving regulatees more flexibility in terms of how results are achieved, as long as high standards are upheld and the appropriate accountability measures are in place. [1]

Third Choice: *Fiscal Incentives*

> **Recommendation**: The Government of Canada should implement specific fiscal incentives to promote the early adoption of environmental technologies. This could include, among other things, tax incentives for innovation, flow-through share incentives, tax credits for early adoption of environmental technologies, refundable tax credits for capital investment in or research related to eco-efficient technologies, or emission credits.

[1] Smart Regulation: A Regulatory Strategy for Canada, Final Report to the Government of Canada, External Advisory Committee on Smart Regulation, September 2004, available at: http://www.smartregulation.gc.ca/en/index.asp

The Final Report on the Western Canadian Environment Industry Forum (December, 2003) recommended a review of the merits of adopting financial incentives similar to those used in other sectors (e.g. fiscal regimes for oil sands development) in the environmental business sector. Financial incentives such as provincial R&D tax credits, renewable energy incentives etc., and other fiscal measures should be examined to determine their overall economic impacts and technology development potential.

At the core of this recommendation was the angst expressed repeatedly in surveys and consultations before, during and after the Forum over the lack of available financing for the development and commercialization of their technologies. Some argued that more government funding should be made available for research and development, demonstration projects and market penetration efforts. Others were critical of the lack of available venture capital funds, or the vagaries of various government support programs that often appeared too cumbersome to work with or which were generally unavailable at the most critical stages of technology development and commercialization.

During the regional workshops, Alberta stakeholders called for refundable tax credits and incentives for capital investment in eco-efficient technologies to overcome known structural weaknesses in environmental technologies industries and to spur the development and survival of new firms.

Manitoba stakeholders were concerned that the design of government support programs shut out companies in that province from financial assistance because they failed to take into account difference in size and capabilities of Manitoba SMEs. BC stakeholders echoed these concerns, citing high transaction costs; cookie cutter requirements by governments; programs tailored to bureaucratic needs rather than industry needs; and a lack of coordination and continuity between programs.

British Columbia stakeholders also argued for an array of fiscal incentives that could be applied when best suited to individual company needs. These could include: credits for reducing pollution; tax incentives for innovation; leveling of the playing field for energy technology (between green and brown energy); emission caps; expanded flow-through share incentives; tax credits for the early adoption of environmental technology; and/or targeted R&D credits.

Many factors were identified in the studies leading up to the Environmental Technologies Forum on why funding for environmental technology development and commercialization was often difficult to obtain. These included: unpredictable commercialization pathways; lack of management experience; the risk of liabilities; and lack of adequate data on technical performance. Just as few investors are willing to risk financing untried technologies, many turn away from deals involving start-up companies with little or no prior business experience.

Few start-up companies have the magical combination institutional investors seek: a management team with experience in building successful companies; a proprietary technology in a sector having terrific market potential; a top-notch technical team; a substantial target market; experience in selling to solid customers; and most of all, a potential cash flow in an acceptable time period.

A Task Force on Early Stage Funding, led by UBC's Sauder School of Business and sponsored by the National Research Council, has been examining all facets of technology commercialization financing in Canada. Drawn from a broad cross-section of institutional managers, government policy makers, university and other participants, the Task Force has been working to develop conclusions that are broadly applicable and relevant to all constituencies, including the environmental sector.

The Task Force focused specifically on the "Funding Gap" – between the 'research stage' of new ventures, where government funding is often available and the 'growth stage' of a business, where traditional venture capital is available. This gap is estimated by the Task Force at $5 billion a year. Seed and start-up financing by the venture capital community in 2003 was a mere $200 million – barely 5% of all R&D financing in Canada. This excludes the vast number of start-up businesses conceived within other companies or by entrepreneurs on their own, implying an even greater demand for commercialization funding.[2]

The Task Force has recommended that the federal and provincial governments jointly enact an Innovation and Productivity Tax Credit (IPTC) regime whereby individuals investing in targeted early-stage innovation companies would receive a refundable tax credit equal to 30% of the funds they invest in such businesses.

Citing research from British Columbia and other locations (Ohio, the United Kingdom and elsewhere), the Task Force notes that such programs work well in terms of attracting large amounts of individual investment capital and know-how in support of early-stage funding of new businesses in the technology/knowledge economy.

Even with a fiscal incentive scheme such as recommended by the Task Force, there will always be a need for mentoring and support of SME's in this sector to better prepare them for the rigours of the hunt for investment financing; measures to remove or reduce risk factors associated with technology verification and pre-commercialization development; and supports for conferences and venture capital venues where potential investors and potential clients can interact.

For these reasons, fiscal incentives for early stage funding will not satisfy all financing needs of firms in this sector. Other fiscal devices will be needed such as

[2] Innovation and Productivity Tax Credit ("IPTC") for Canadian Small Business, Working Paper, Canadian Task Force on Early Stage Funding (CTFESF); Draft #1, R4, October 29, 2004.

tax credits for the early adoption of environmental technology; incentives for energy conservation; risk reduction measures to stimulate early adoption of innovative technologies and products; as well as education measures to overcome resistance to change and to build consumer demand for environmentally sound solutions.

There is ample scope for such other measures. Budget 2004 put forward several proposals designed to enhance access to new venture capital financing and to help companies – particularly small companies – to commercialize their products and services. These included $270 million set aside for new investments in venture capital financing by the Business Development Bank of Canada (BDC) and the Farm Credit Corporation (FCC).

Other Budget 2004 measures relevant in this context include - reflecting the sale of Petro-Canada shares – an additional $200 million provided to Sustainable Development Technology Canada (SDTC), and commitments for a further $800 million over the next seven years to support emerging environmental technologies.

Green Procurement

As was noted in the introduction, a fourth recommendation was given enough weight in the combined ratings (1st, 2nd, or 3rd) of the Ipsos-Reid survey to warrant inclusion in the list of top priorities for federal government consideration, namely "the Government of Canada should adopt a green procurement policy".

While just 11% of industry representatives polled in the Ipsos-Reid survey chose it as their first choice, fully 41% selected it overall as first, second, or third. This means they place it comfortably close to their top three choices. All other options form a third tier of priorities for industry representatives, with between a fifth and a quarter of combined votes.

Green procurement has been a constant theme throughout the consultation process on western Canadian environmental technologies. British Columbia stakeholders noted that since the federal government is the nation's largest owner, developer and tenant of commercial property, it should require LEED Gold Standards in all new construction where there is federal government funding, particularly with respect to infrastructure renewal and the 2010 Olympics. Similar sentiments were expressed in other regions.

Industry stakeholders applauded recent efforts toward the "greening of government operations", in particular an initiative launched in May 2004 by Public Works and Government Services Canada, involving purchases of low emission vehicles, LEED Gold standards for new government buildings, green leases for rented facilities, and green standards for government purchases of other goods and services.

The issue is not solely a federal government matter, however, governments and public service organizations such as schools, hospitals and universities collectively have the purchasing power capable of transforming the marketplace in favour of green goods and services. Green (or sustainable) purchasing means selecting those goods and services which promote a healthier community and environment. It can be achieved by incorporating key environmental and social factors with traditional price and performance considerations in purchasing decisions. Sustainable purchasing means considering the costs as well as the environmental and social impacts of products and services through all stages of their lifecycle, from product development and manufacturing to product use and to the ultimate disposal of whatever remains of the product at the end of its useful life.

Green procurement can extend also to the purchase of clean energy, recycled and non-toxic products, energy and water efficient technologies, green building design and construction, information and communication technologies, sustainable transportation products and services, and a host of other environmentally sensitive service areas.

This perspective is evident in a recent statement by the Minister of the Environment that the federal government will lead by example in ensuring that its buildings and fleets of vehicles are as environment-and climate-friendly as possible, and that the Government of Canada's procurement will be managed to ensure the lowest possible impact on the environment.

It is understood that Public Works and Government Services Canada is working on a Green Procurement Policy statement scheduled for release 2006 and that practical work is underway as part of the Treasury Board Secretariat's effort to implement their sustainable development strategy (SDS) that includes green procurement.

While it was recognized that a great of activity is underway on this matter, the western Canadian environment industry stakeholders consulted were anxious to see immediate changes put in place that would strengthen the capacity of public and private sector buyers to begin making purchasing decisions that would stimulate the development and early adoption of new environmental technologies, products and services. They also signalled a desire to be part of any consultative effort launched to implement sustainable procurement strategies both at the federal and provincial levels of government.

In summary, industry stakeholders believe the federal government's purchasing power can be an effective tool to stimulate the early adoption of environmentally sound and energy efficient products, services and technologies. To this end the federal government is encouraged to move quickly to implement the stated commitment to make sustainable procurement a reality for the purchase of goods and services by federal departments and agencies. This also

would require LEED Standards (or equivalents as relevant) for all new construction where federal funding is involved.

Other Recommendations

Fewer than four-in-ten industry representatives rated the final three options as top priorities "taking actions to reduce the potential risk to early adopters of new environmental technologies" (38%, mean 6.3); "providing support to mechanisms or organizations that will assist SME's in product development and commercialization (33%, mean 6.2); and "promoting the development of business infrastructure that would support environmental technology in Western Canada" (34%, mean 6.1).

This does not mean that these are minor issues or that work to deal with problems in these areas should not proceed. Indeed, during the Environmental Technologies Forum and in subsequent consultative meetings, many observers raised concerns about the need for mentoring of SME's in the sector; the problems of inconsistent and intermittent government support programs; and the absence of coherent market development and promotional efforts for western Canadian environmental solutions in the international arena.

While this report does not put forward specific recommendations concerning these issues (being mindful of the Prime Minister's admonition to avoid shopping lists), the stakeholders consulted agree that attention must be paid to these matters and that changes are required.

Conclusion

In general, the 2004 Environmental Technology Industry survey, and the consultative process leading to it, have provided an excellent basis upon which to respond to the Prime Minister's December, 2003 challenge to bring forward clear, precise signals as to how government can help stimulate the industry.

The Prime Minister said "Come to us with concrete suggestions" and the western Canadian stakeholders consulted have done just that. The preceding recommendations are designed not only to help guide the federal government in its efforts to create a more sustainable Canada, but also to help position the western Canadian environment sector to be better able to contribute to that vision.

Appendix I

The Validation Process

The challenge before Western Economic Diversification Canada was to verify the draft recommendations within the context of the emerging national scene before recommending new environmental technology development initiatives having province-specific, pan-western or national implications.

Western Economic Diversification Canada was sensitive to the concern that long-term visioning on the future of the environmental sector in the west should not be compromised by short term "early wins" designed to meet the heightened expectations of Forum participants. Consequently the department broadened the base of consultations to fashion a set of clear recommendations based on a broader consensus in each region.

The process chosen consisted of three phases:

- A series of industry roundtables in each province;
- An on-line survey conducted by ***Ipsos-Reid Corporation***, with support from the ***GLOBE Foundation of Canada***, and
- A final round of consultations to review the findings of the Survey as contained in a brief report prepared by the GLOBE Foundation (this document).

The first phase was carried out from mid-August to early September 2004. Representatives from Western Economic Diversification Canada in each of the four western provinces held workshop discussions to identify priority policy options the federal government could adopt to assist the environmental technology industry.
These workshops also helped in the design of the web survey questionnaire, particularly in selecting the key seven or eight options that would be tested.

Ipsos-Reid Corporation prepared a series of suggested guidelines for the workshops so that discussions would occur within a similar framework across all provinces. Upon receiving written summaries of the workshop discussions, Ipsos-Reid, together with the Globe Foundation, reworked the top options to be included in the web survey questionnaire for Phase 2 of the validation process.

Before implementing the survey, Ipsos-Reid had a series of consultations with Western Economic Diversification Canada staff in all four western provinces to finalize the option descriptions. This was essential, as the descriptions had to be clear, understandable, and focussed on issues with which industry representatives in each province could readily identify.

The Proposed Recommendations

The recommendations put forward for the validation process were as follows:

1. **The Government of Canada should: Implement specific fiscal incentives to promote the early adoption of environmental technologies.** This could include, among other things, tax incentives for innovation, flow-through share incentives, tax credits for early adoption of environmental technologies, refundable tax credits for capital investment in or research related to eco-efficient technologies, or emission credits.

2. **The Government of Canada should: Provide support to mechanisms or organizations that will assist SME's in product development and commercialization.** This would, for example, help small and medium sized enterprises in market assessment activities, business planning and product development, identifying markets, and bringing products to the marketplace.

3. **The Government of Canada should: Promote the development of business infrastructure that would support environmental technology development in Western Canada.** This would mean supporting the development of infrastructure (for example, technology development networks and/or centres) that could act as nodes of expertise to help promote new business-government partnerships, and to assist in the commercialization of environmental technologies.

4. **The Government of Canada should: Provide support for and fund demonstration projects.** This would mean providing the necessary financial and regulatory frameworks to assist in the development of specific projects that can be used to test and showcase environmental technology products and solutions, which can be used to improve the quality of life in cities and communities in Canada and elsewhere.

5. **The Government of Canada should: Take actions to reduce the potential risks to early adopters of new environmental technologies**. This could include adopting a policy of being the first purchaser of new environmental technologies to help in the development and commercialization of these new products or providing a premium to cover the incremental costs of new technology adoption.

6. **The Government of Canada should: Adopt a green procurement policy for government.** Government would undertake to revise its procurement policies to favour sustainable goods and services. This could include, for example, requiring LEED Gold standards in all new construction in which there is federal government investment; purchasing only recycled paper; purchasing only low emission vehicles; and having the federal government tie sustainable development standards to major infrastructure investments such as the 2010 Olympics.

7. **The Government of Canada should: Improve access to government program financing.** This could include revising the design of existing federal government support programs or streamlining and integrating these programs, to make them easier to understand and apply for, and to help businesses and other organizations to meet program eligibility requirements.

8. **The Government of Canada should: Adopt regulatory regimes that encourage the development of environmental technologies**. This could include revising and updating federal government regulations to remove barriers and impediments to innovation, and to increase incentives for the application of new environmental technologies. This would also mean encouraging similar changes in provincial and municipal government regulatory regimes.

Industry Survey Profile

In addition to questions on the recommendation options, Ipsos-Reid inserted a number of background profile and diagnostic questions about the environmental technology industry. These were designed to poll respondent views about the overall state of the environmental technology industry in Western Canada and their expectations with respect to their own enterprises, where appropriate. These questions were to be cross referenced with various parameters of the respondent companies (i.e. size, markets, sub-sector, etc.).

The polling sample was drawn from various components of the industry, namely:

- Water (e.g. water supply, conservation, wastewater management, sewage treatment)
- Air (e.g. air pollution control, air quality monitoring or management)
- Waste (e.g. hazardous and non-hazardous waste management, remediation or treatment of soil, surface water, seawater or groundwater)
- Technologies to reduce greenhouse gas emissions (e.g. solar and wind energy, fuel cells, alternative fuel technologies, cogeneration, methane capture, etc)
- Analytical Technologies (e.g. environmental monitoring, software, laboratory analysis, risk assessment)
- Other Environmental Goods (e.g. noise and vibration abatement, other systems or equipment)
- Environment-related or Green Construction
- Research and Development (e.g. environmental technology research and development)

- Consulting Engineering and Analytical Services (e.g. consulting engineering, analytical services, data collection and analysis)
- Environmental Management Systems
- Green Information Infrastructure
- Sustainability Planning, Urban Development and Support Services
- Green Transportation Services

In total, 197 representatives of the environmental technology sector were invited to participate in the survey.

Survey Results[3]

The web survey was conducted from October 13th to November 1st, 2004. Letters were sent by Western Economic Diversification Canada to industry representatives across the west leading them to the web survey. In total, 68 of 197 people contacted completed the survey (a response rate of 35%). Ipsos-Reid is 95% confident that the survey results fall within +9.6 percentage points of what would have been the case had the entire 197 representatives been surveyed.

The key results from the findings are as follows:

The first two recommendations identified as top priorities for the federal government by industry representatives were:

- Provide support for and fund demonstration projects (61%, mean 7.3);
- Adopting regulatory regimes that encourage the development of environmental technologies (59%, mean 7.6).

In both cases, about six-in-ten survey respondents rated them as top priorities (i.e. 8, 9, or 10 on the scale), and they had higher relative mean scores than all other options. [4]

[3] Findings taken from: *Environmental Technology Industry Web Survey Report of Findings (2004),* Ipsos-Reid, November 15, 2004.

[4] The 61% and 59% means that six-in-ten industry representatives felt the federal government should give "top priority" to providing support for and fund demonstration projects, and to adopting regulatory regimes, etc. The mean score is simply the average score out of 10 given to both options on the same priority scale. Because they are higher than the rest, it means that a greater proportion of industry representatives rated these two options quite highly on the priority scale.

The third recommendation to be included in the list of top priorities was:

- Implementing specific fiscal incentives to promote the early adoption of environmental technologies".

Just under half of industry representatives surveyed (49%) rated it 8, 9, or 10, and its mean score was a notable 7.2 out of 10.

When asked to identify which options the federal government should move on "first and most urgently", industry representatives identified the same three options: "adopting regulatory regimes that encourage the development of environmental technologies" (25% 1st choice votes); "implementing specific fiscal incentives to promote the early adoption of environmental technologies" (17%); and "providing support for and funding demonstration projects" (16%).

Overall, a greater proportion of industry representatives also selected these same three options as their second and third choices for immediate federal government action. Thus, when first, second, and third choice votes are combined, close to 6-in-10 representatives signalled their desire for action on regulatory regimes (53%) and demonstration projects (57%), and close to half singled out fiscal incentives (49%).

A fourth option stands out for its combined rankings:

- Adopt a green procurement policy for government".

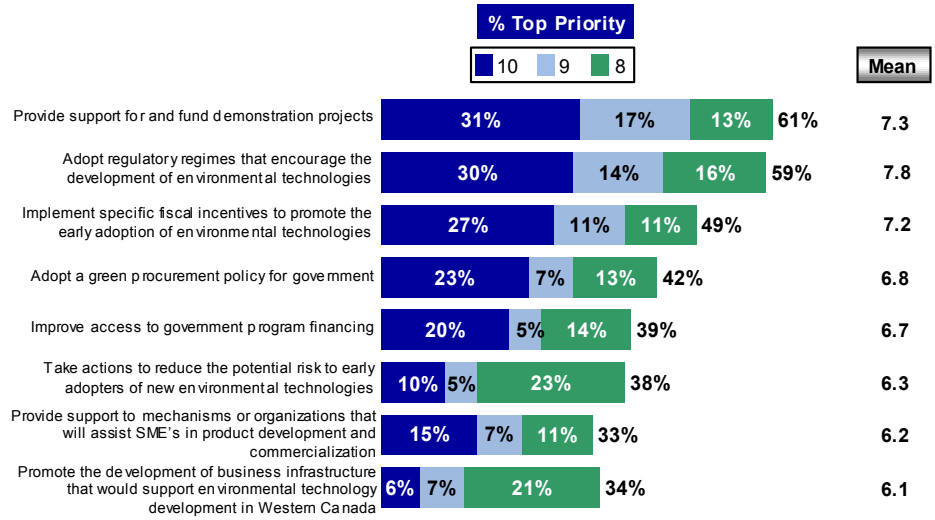
While just 11% of industry representatives chose it as their first choice, fully 41% selected it overall as first, second, or third. This means they place it comfortably close to their top three choices.

Lastly, fewer than four-in-ten industry representatives rated the final four options as top priorities "improving access to government program financing" (39%, mean 6.7); "taking actions to reduce the potential risk to early adopters of new environmental technologies" (38%, mean 6.3), "providing support to mechanisms or organizations that will assist SME's in product development and commercialization (33%, mean 6.2), and "promoting the development of business infrastructure that would support environmental technology in Western Canada" (34%, mean 6.1).

The overall results of the survey are summarized in the Charts below.

Overall Evaluation of Policy Options

Now that you've read the suggested policy options, we'd like you to rate them on a 0 – 10 scale based on what level of priority you feel the federal government should give to each.*

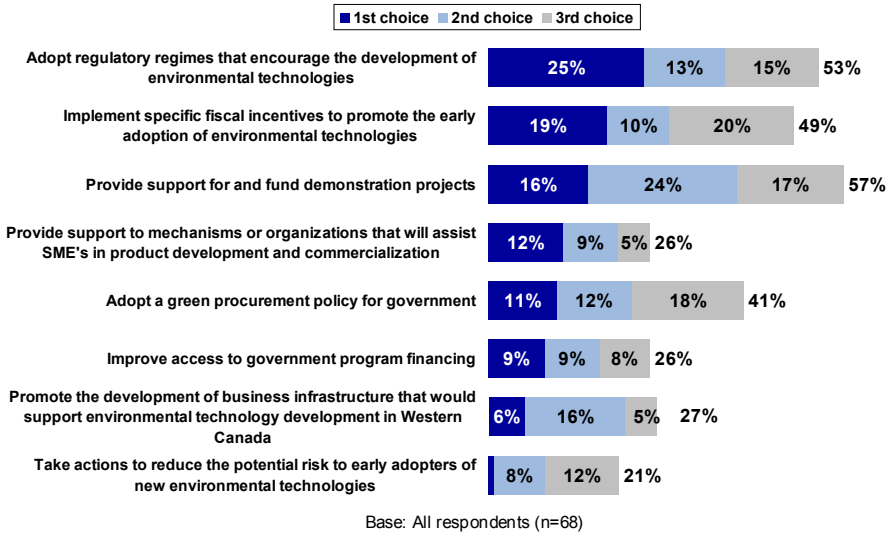


** 0 = 'not a priority at all', 10 = 'top priority'*

Base: All respondents (n=68)

Priority of Policy Options

Now, please choose three policy options to which you think the federal government should give top priority for the environmental technology industry, i.e. things the government should act upon first and most urgently.



Base: All respondents (n=68)

Appendix II

Perceptions of the Western Canadian Environment Industry

The 2004 Environmental Technology Industry Web Survey incorporated a number of questions to better understand the landscape of Western Canada's environmental technology sector. The resulting profile of the industry's principal characteristics provides for a better understanding of stakeholder perceptions of their industry and what is needed to strengthen its capacity to compete. The key findings are as follows.

- No single business model dominates the western Canadian environmental technology industry. Thirty-four percent of respondents own their business, while 26% say they work at a university, research institute, or for a non-profit organization. Two-in-ten industry leaders (18%) work for a company or business.

- With respect to company size, the environmental technology industry in Western Canada is fairly evenly split between small (48% - 14% work alone, 34% less than 10 employees) and mid to large sized companies (51% - 28% 10-50 employees, 23% 51+employees).

- Companies and organizations in the environmental technology sector in Western Canada work in a multitude of environmental technology sectors – with "technologies related to greenhouse gas emissions" being the most prominent area of focus. Seven-in-ten (71%) industry leaders work to develop and study "technologies that will reduce greenhouse gas emissions".

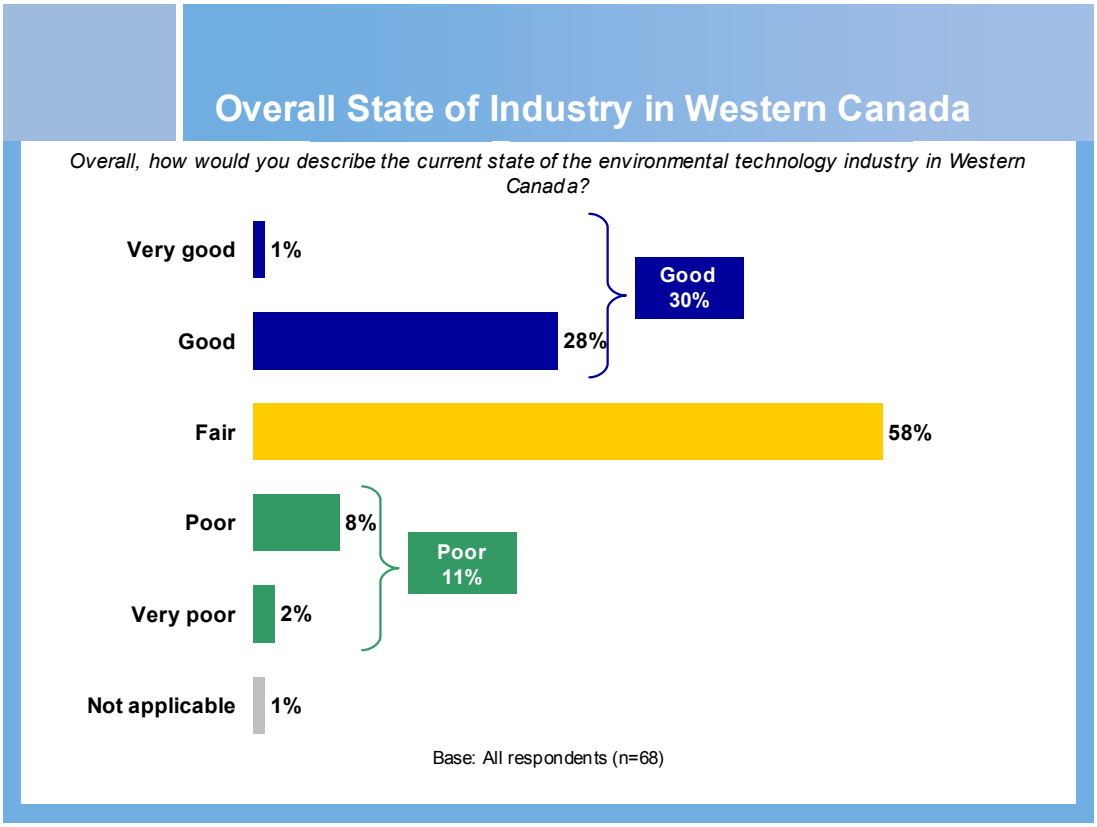
- A similar proportion – mentioned by 50% and 52%, respectively – work in "research and development" and "water".

- Roughly four-in-ten industry leaders work in the sectors of "air" (38%), "sustainability planning, urban development and support services" (40%) and waste (39%).

- Other sectors include "consulting engineering and analytical services" (36%), "analytical technologies (29%) and "environmental management systems" (23%).

Overall, industry respondents hold lukewarm views of the state of the environmental technology industry. When asked, the majority of industry leaders (58%) described the current state of their industry as "fair". Three-in-ten (30%) describe the industry as "very good" or "good". Just 11% of industry leaders feel

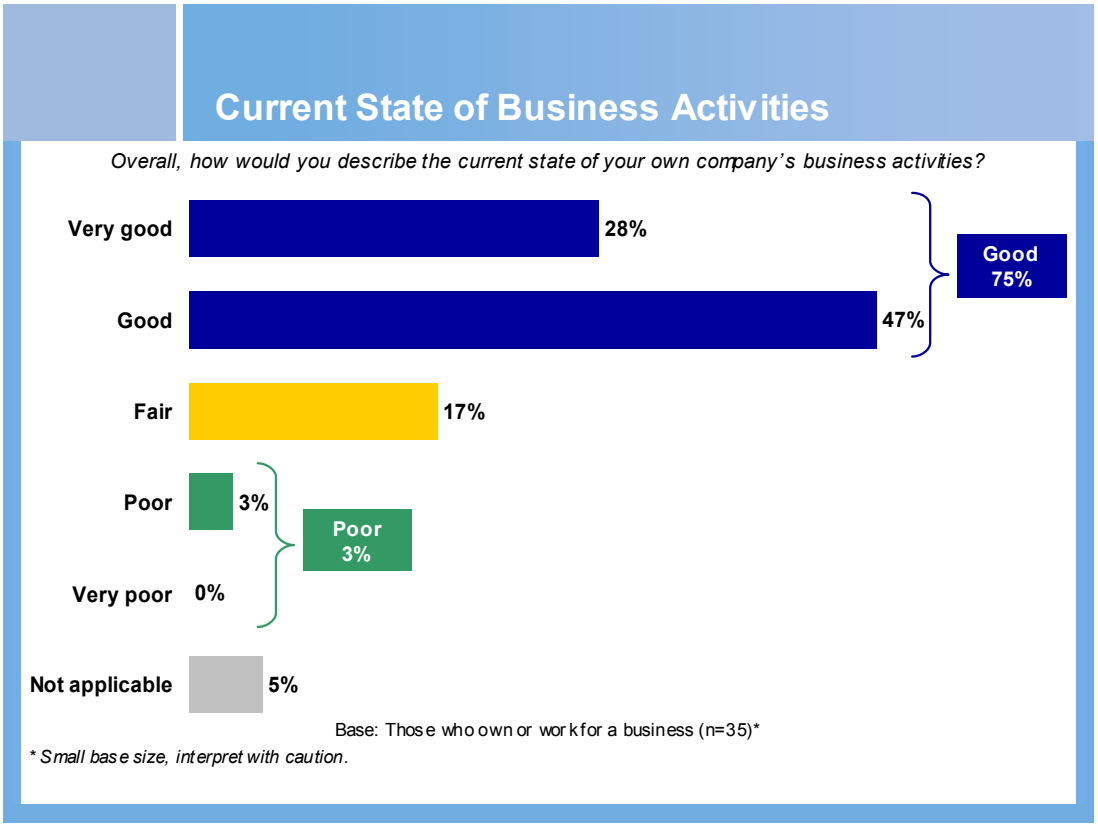
the state of the environmental technology industry is "poor" (8%) or "very poor" (2%).



When it comes to the current state of business activities in the environmental technology industry, it's evident that industry representatives are much happier with their own business dealings than the overall state of the industry.

A full three-quarters (75%) of respondents who run their own business or work for a company, describe the current state of their company's business activities in glowing terms ("very good" or "good"). Another 17% state their activities as "fair". To contrast, just 3% of industry representatives felt their business activities were in a "poor" state.

These findings are graphically displayed in the chart below.


Current State of Business Activities
Overall, how would you describe the current state of your own company's business activities?
Very good
28%
Good
47%
Good 75%
Fair
17%
Poor
3%
Very poor
0%
Poor 3%
Not applicable
5%
Base: Those who own or work for a business (n=35)*
* Small base size, interpret with caution.