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Highlights from the Report:
**The Canadian Market for
Environmental Products and Services**



Environmental Industry
Sector Initiative
Industry, Science and
Technology Canada

Canada

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INTRODUCTION

In March 1991, the consulting firm Ernst & Young completed a report for the Environmental Industry Sector Initiative of Industry, Science and Technology Canada (ISTC). Entitled *The Canadian Market for Environmental Products and Services*, the report gave us the data we needed to put together this booklet, which represents a first picture of the growing market for industrial environmental goods and services.

The environmental market encompasses many different goods and services. Because of this diversity, we have identified four categories of goods and services (see Figure 1), each of which presents its own challenges and opportunities:

- dedicated environmental technology, products and services used by industry
- multi-purpose industrial technology, products and services with a range of applications, one of which is protecting the environment
- clean industrial processes, whose use benefits the environment
- environmentally friendly consumer products and services

In this booklet, we focus on business opportunities associated with the products and services in the first two categories. We took this approach for a number of reasons:

First, the range of products and services among the four categories is very broad – from cloth diaper services and phosphate-free detergent, to semi-permeable-membrane technology and environmental research – that we decided to focus only on industrial products and services. (The consumer products and services category may deserve a separate market study. Unlike the other categories, which are driven primarily by regulations, this one is influenced mainly by consumer preferences and attitudes and has a different supplier profile.)

Second, although the market for clean industrial processes is important, accurate figures are not readily available on either the money that corporations are spending in this area, or how much of this money might properly be labelled as environmental expenditures. (Our best guess is about \$3 billion annually.)

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Third, we focused on categories 1 and 2 because we believe that the size and growth potential of the market for these industrial products and services present immediate business opportunities for the environmental industry.

Ideally, it would be useful to have discrete market information for each category. However, Ernst & Young researchers found that their sources of information don't separate expenditures for the technology,

products and services in category 1, from those in category 2. Therefore we treat the two categories as one in this booklet.

In summarizing the key findings of the Ernst & Young report, we briefly describe the environmental market – its features and who is buying what environmental products and services, and how much they are spending on them. We also identify growth areas and some emerging business opportunities for the industry. Finally, we highlight some key messages in the March 1991 report which are aimed at dedicated environmental companies in Canada.

We hope you find this booklet useful, and that it will suggest some fruitful strategic directions for your company in capturing its share of a large and steadily growing market for industrial products, services, and technology.

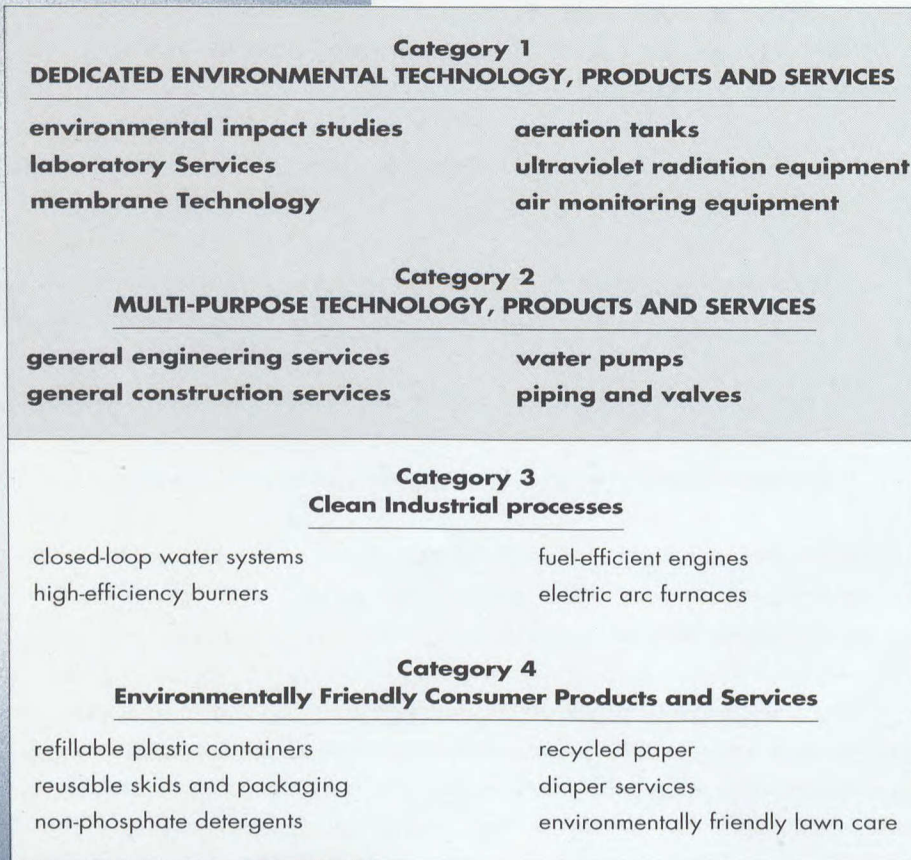


FIGURE 1:

FOUR
 CATEGORIES OF
 ENVIRONMENTAL
 PRODUCTS
 AND SERVICES

What you should know about the market

- The market is driven almost entirely by legislation. Its growth depends to a large extent upon new standards and regulations.
- The size of the market in Canada is between \$5 billion and \$7 billion annually.
- The growth in constant dollars is about 5 percent to 7 percent per year.
- Growth will be steady.
- Municipalities are your largest potential customers. They spend between \$2 billion and \$2.5 billion each year on tradable products and services – products and services which are purchased on the open market.
- The pulp and paper industry presents another key market opportunity, especially for water treatment.
- Technical capacity and price are key buying criteria.

Legislation and the Market

In Canada, all levels of government (federal, provincial and municipal) create laws and regulations that play a large part in driving the demand for environmental products and services. Over the next five years, the market's growth will be tied to existing and proposed legislation.

Of note is the federal government's Green Plan. Some of its objectives will stimulate demand for industrial environmental products and services. For example, by the year 2000, the government plans to have stabilized emissions of carbon dioxide and other greenhouse gases and to have virtually eliminated discharges of toxic substances into the environment. In the same time frame, the Plan aims to reduce emissions that cause smog in problem areas by 40 percent, and solid waste by 50 percent.

The federal government isn't alone in its efforts to clean up the environment. Some provinces are developing wide-ranging environmental legislation. For example, Ontario's Municipal-Industrial Strategy for Abatement (MISA) is likely the most comprehensive environmental

legislation in Canada. MISA aims to prevent municipalities and nine industrial sectors from discharging any toxic contaminants into Ontario's lakes and rivers. Clearly, legislation will create a strong demand for products and services that will enable municipalities and industries to meet the new rules and standards.

The Government of Quebec is working on legislation that will sharply increase the demand for services and products used to treat

municipal water supplies and to reduce and control air and water pollution from industrial plants.












Other provinces are also developing environmental legislation and standards. These will address areas such as recycling, air and drinking water quality, emissions from incinerators, and discharges of dioxins and furans from pulp mills.

The Market is Large

We estimate that the current market for environmental goods and services is between \$5 billion and \$7 billion per year. However, these figures relate only to tradable products and services. The figures exclude non-purchased services, such as analytical services supplied in-house by a government labor-

atory. As previously mentioned, about \$3 billion more is spent annually on clean industrial processes.












Capital projects, including spending on products and engineering and construction services, account for between \$3 billion and \$4 billion – or 60 percent of the market. Environmental services unrelated to capital projects account for the rest.

Market Segment	Annual Spending Estimates
 Municipalities	2 100 – 2 500
 Pulp and Paper	700 – 900
 Forestry Services	400 – 500
 Chemical Manufacturing	300 – 400
 Utilities	300 – 350
 Mining	200 – 300
 Oil and Gas	150 – 300
 Federal and Provincial Governments	150 – 240 *
 Other Manufacturing	75 – 100
 Iron and Steel	50 – 100
 Industrial Minerals	20 – 30
Other	500 – 900
Total	4 945 – 6 620

*These figures include tradable products and services, but do not include non-purchased services. Consequently, figures understate total spending by this segment of the market.

FIGURE 2:
ESTIMATES OF
SPENDING BY
MAJOR MARKET
SEGMENTS
IN 1990
(\$ MILLIONS)

Figure 2, opposite, shows how much major segments of the market are spending on environmental technology, products and services, and Figure 3, below, shows in more detail where these segments are spending their environmental dollars. Figures are estimates based on a survey of companies in each segment.

Market Segment	Air	Water	Solid Waste	Hazardous Waste	Conservation	Other*	Total
 Municipalities		1 700-1 900	400-600				2 100-2 500
 Pulp and Paper	150-175	500-600	50-75				700-900
 Forestry Services					400-500		400-500
 Chemical Mfg.	100-130	100-130	10-20	90-120			300-400
 Utilities	230-250	25-30	10-15	Undetermined†	30-40		300-350
 Mining	80-125	80-125	40-50				200-300
 Oil and Gas	50-100	50-100	5-10		45-90		150-300
 Federal and Provincial Governments						150-240	150-240
 Other Manufacturing	10-20	50-60	15-20				75-100
 Iron and Steel	10-20	30-60	10-20				50-100
 Industrial Minerals	5-10	5-10	5-10			Undetermined†	20-30
Other	50-150	50-150	500-600				500-900
Total	685-980	2 590-3 165	1 045-1 420	95-125	475-630	155-245	4 945-6 620












* Includes noise control, laboratory equipment and monitoring equipment.
† Indicates a small market whose exact size has not been determined. Totals have made allowances for these markets.

FIGURE 3:
SPENDING
PATTERNS
FOR MARKET
SEGMENTS
(\$ MILLIONS)

The Market is Growing

A predicted steady annual growth rate of between 5 percent and 7 percent (constant dollars) in the market should create new business opportunities for firms that supply environmental products and services. Existing and new technologies will be in demand.

Figure 4 shows at a glance the expected growth of different segments of the market. Take note of the facts below. They underscore the opportunities in four customer segments and indicate new opportunities for the environmental industry.

Market Segment	High Growth	Moderate Growth	Low Growth	Comments
 Municipalities		√		Concentrated in Quebec. Stable spending in other provinces.
 Pulp and Paper	√			High growth in wastewater treatment systems and moderate growth for air control systems.
 Forestry Services			√	Little growth expected.
 Chemical Manufacturing		√		Spending on air emission controls.
 Utilities	√			Growth in spending on air emission controls. Some increased spending to meet MISA requirements.
 Mining			√	Significant spending, but much of the investment will likely be made in process technology or other internal solutions.
 Oil and Gas			√	Continued strong spending, but little growth.
 Federal and Provincial Governments	√			Increased spending due to the Green Plan.
 Other Manufacturing	√			Strong growth expected in the demand for testing and consulting services in Ontario.
 Iron and Steel			√	Continued strong spending, but little growth.
 Industrial Minerals		√		Will have to meet MISA requirements in Ontario.

Note: High Growth: Greater than 10% per year (real growth).
 Moderate Growth: Between 5 and 10% per year (real growth).
 Low Growth: Less than 5% per year (real growth).

FIGURE 4:

GROWTH

PROSPECTS

FOR KEY

MARKET

SEGMENTS

Opportunities by Customer Segment

Municipalities

- Many municipalities in Canada have no sewage facilities.
- Many small municipalities in all provinces will have to upgrade their treatment facilities in the next few years.
- Some large cities, such as Vancouver and Victoria, will likely make major additions to their sewage treatment plants in the near future.

- Some 300 to 400 municipalities in Quebec are expected to add drinking water treatment facilities in the next few years.
- In Nova Scotia, a new law banning uncontrolled incineration at landfill sites will create a market for solid waste management and incineration technology.
- Spending on solid waste management by Canadian municipalities totals about \$450 million to \$550 million per year.

Pulp and Paper

- The industry's total investment over the next five years in water treatment and air emission controls could vary between \$500 million and \$1 billion annually, depending on legislative timetables.
- Customers will be looking for existing and new technologies to reduce pollution.

Utilities

- Growth in this segment will mean a demand for new control systems to reduce emissions of sulphur dioxide and nitrous oxide from generating plants that burn fossil fuels.
- Ontario Hydro alone expects to spend some \$2.8 billion on air pollution control over the next decade.

Biomedical Waste

- About 96 hospitals in Ontario have outdated incinerators.
- Problems related to hospitals will create a demand for waste-handling services, engineering consultants and new incineration technology.

Emerging Opportunities for Specific Products and Services

Environmental Management

- Many companies in Ontario will have to adopt environmental management practices for the first time because of MISA and other proposed legislation.

Testing Services

- The industry should continue to find new customers, especially in Ontario, as MISA is expanded to cover all industrial polluters.
- In the long run, the demand for testing services should grow in other provinces, as they adopt regulations similar to Ontario's.

Market Growth is Steady

Although demand may change to some extent from year to year, it remains predictably steady. Legislation sets target dates for customers to comply with new standards. These target dates recognize that municipalities and private sector companies may have to plan and complete large capital projects before they can comply, and that these projects have to be part of a long-term capital plan. So environmental spending usually takes place over a long period, which steadies growth from year to year.

Key Buying Criteria

The organizations that we surveyed ranked technological capability first and price second as the key criteria when deciding on major equipment purchases.

Industry tends to stress technological capability over price, especially when new problems are involved or the technology is complex. Municipalities and Crown corporations are often more concerned with price because of the tendering system they use.

SOME KEY
MESSAGES
FOR CANADIAN
ENVIRONMENTAL
BUSINESSES

The market for environmental goods and services is a growth market. Clearly, public and political concern about protecting or restoring the environment will steadily fuel this growth over the next ten years. While federal and provincial governments have spurred the market's immediate growth through environmental legislation, they are also committed to supporting environmental industry in the longer term through research and development and other programs.

Given this outlook, companies should keep certain key messages in mind in pursuing the business opportunities that the burgeoning environmental market has created.

- *Keep abreast of environmental legislation in the United States and Europe.*

Companies who know what is going on in these jurisdictions will be better able to anticipate future Canadian legislation and, therefore, emerging technology requirements. Clearly, if your company can supply technology to meet the standards of the most exacting of jurisdictions, you can also supply that technology to others whose standards are less stringent. At the same time, Canadian business should watch for opportunities for transferring technology and forging strategic linkages with other companies south of the border and overseas.

- *Canadian suppliers will have to get out there and sell in order to grasp the market's many and growing number of opportunities.*

A communication gap exists between Canadian suppliers of environmental goods and services and their Canadian and foreign customers. Research indicates that many potential buyers generally know little about Canadian suppliers and the technology they have to offer. Companies (especially those with new technology or technology under development) should make customer awareness a key part of their marketing strategy.

- *Talk to engineering consultants – an important target group in any awareness campaign.*

Their role varies, depending on the company and the project. However, our research indicates that more than 75 percent of companies use engineering consultants for major projects. These consultants play an even more important role in the decision-making process if new technology is involved.

- *Creating links with government is important.*

As noted earlier, legislation drives the market to a large extent. Governments base standards (e.g., those for controlling air emissions and water discharges) on their understanding of the best available technology.

If your company is developing new leading edge environmental technology, you should be talking to government people to help establish your market. Tell them what your system can do.

In addition, having links with government can be helpful in gathering information on the direction of future legislation. Remember too, that governments offer a number of support programs aimed at providing companies with information (both business and technical) and other help.



The March 1991 study that produced the information summarized in this booklet is one of many funded in whole or in part by the Environmental Industry Sector Initiative. It is one of the building blocks of the Initiative's main objective, which is to improve the competitiveness – at home and abroad – of Canadian companies that produce environmental goods and services.

Much of the Initiative's work since it got under way in April 1989 has been aimed at developing a comprehensive picture of the sector and its markets. It has done so through its research and by building a consultative network that encompasses the industry and federal and provincial government departments and agencies. The result: a pool of information that didn't exist two years ago. ISTC now has useful economic, scientific and technical data that should help the sector to realize its full potential, and which we are eager to share with you.

If you would like more information about anything in this booklet, or about the Environmental Industry Sector Initiative itself, you can contact:

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