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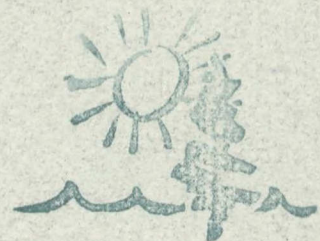
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TOWARD SUSTAINABLE DEVELOPMENT:

Challenges and Opportunities



Canada

CANADA'S GREEN PLAN

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Printed on recycled paper

June 1991

© Minister of Supply and Services Canada 1991
Cat. No. C2-154/1991
ISBN 0-662-58191-1

PU 0132-90-03

TOWARD SUSTAINABLE DEVELOPMENT:

Challenges and opportunities arising from Canada's Green Plan, and how Industry, Science and Technology Canada (ISTC) is preparing to help Canadian industry and science respond to them.

“ Sustainable development is ... economic development that meets the needs of the present without compromising the ability of future generations to meet their own needs. ”

Our Environmental Challenge

Public Concern

Sustainable development provides the philosophical underpinnings for Canada's Green Plan, the Government of Canada's environmental agenda. The call for sustainable development was first sounded by the World Commission on Environment and Development in its *Brundtland Report*, which has helped to raise worldwide concern about the quality of the environment. Sustainable development is based on the premise that long-term economic growth depends on a healthy environment and that environmental and economic decision making cannot continue to proceed in separate spheres. Sustainable development is, therefore, economic development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

In Canada, concern for the environment is extremely high, and there is growing recognition of the global consequences of individual actions. The willingness of Canadians to participate in municipal blue box recycling programs is one sign of this. Industry has recognized the shift in public attitudes and has begun to make its operations and products more friendly toward the environment. Canadians are pressing industry and governments to take bolder steps and to manage the use of Canada's natural resources in a more sustainable manner.

The Government of Canada's Response

Environmental stewardship is a shared responsibility of all governments in Canada. The Government of Canada, for its part, has signed international protocols and conventions respecting emissions of sulphur dioxide, nitrogen oxides and chlorofluorocarbons, and the transboundary transportation of hazardous wastes. It has passed the *Canadian Environmental Protection Act* to regulate the production, use and disposal of chemicals. It has created a Cabinet Committee on the Environment to ensure due consideration is given to the environmental effects of federal decisions. In cooperation with the provinces, it has begun clean-ups of the St. Lawrence River, the Great Lakes and contaminated waste disposal sites. With the provinces and other interested parties, it has endorsed a National Packaging Protocol to reduce the amount of waste resulting from packaging.

The release of Canada's Green Plan confirms the Government's intention to enhance its domestic and international leadership on the environment. The Plan represents a comprehensive approach to environmental concerns. Included are initiatives designed to improve environmental information, education, and science and technology; tighten, where necessary, the regulatory framework facing industry; and advance the international environmental agenda. A key message of the Green Plan is the Government's commitment to sustainable development.

This commitment will mean some fundamental change and adjustment. Sustainable development challenges Canada's traditional reliance on the exploitation of its rich endowment of readily accessible natural resources and on the ability of Canadian firms to compete successfully in world markets. The Government recognizes that the transition to an economy based on sustainable development will require skilful management and a combined effort from all Canadians.

The Government is also aware of the need for a regulatory regime that meets its objectives while encouraging the development of innovative and cost-effective means to achieve them. This has led to the Government's decision to examine closely the usefulness of economic instruments to complement, or perhaps supplement, the use of traditional regulatory mechanisms. User charges and tradeable emission permits are two examples of economic instruments that could be used to harness market forces to achieve environmental objectives.

Adjusting to Sustainable Development

Opportunities for Industry

All sectors of Canadian industry will be challenged, in varying degrees, to use resources more efficiently, in order to reduce waste and to develop more durable products that can be recycled. For some sectors meeting this challenge may mean significant adjustment costs.

These challenges will also generate many new opportunities for Canadian industry and small business — the creation of new products and services, the manufacture of pollution abatement equipment as well as general machinery and equipment that is considered "clean," the development of recycling and waste exchange industries, and the packaging and promotion of environmentally "clean" tourist attractions. The adjustment process should also result in benefits to industry over the long term, bringing gains in competitiveness through the more efficient use of energy and resources. Furthermore, the development of environmentally safe products and processes will give enterprising Canadian firms a competitive edge and access to new markets.

Opportunities for Science

Canadian industry will be heavily dependent on the science community to develop new science and technologies to solve environmental problems. Major users of science and technology, such as the resource-processing industries, will be looking for cost-effective ways of complying with environmental regulations while remaining competitive. Growing numbers of scientists and technicians will need to be trained to meet these requirements. There will be opportunities for more research to improve our scientific understanding of the environment and its relationship to the biosphere.

ISTC's Role

To help Canada's industrial and scientific communities meet the environmental challenge, ISTC is committed to a process of full consultation with its clients and to the development of new partnerships, both within the federal government and among government, industry and science. The department's role is to act as an agent of change in the 1990s, to help develop and apply innovative solutions to environmental problems by fostering the following:

- positive investment climates;
- development of new, more effective technologies; and
- growth of Canadian environmental industries.

A Positive Investment Climate

In fulfilling its mandate to promote international competitiveness and scientific excellence, ISTC acts as a reasoned advocate within the federal government for the interests of the industrial and scientific communities. Consequently, ISTC seeks to influence the scope and timing of environmental regulations and the nature of environmental initiatives so that they:

- meet the highest international standards;
- reflect the legitimate concerns of both the business and science communities;
- maximize economic opportunities available to Canadian businesses (including the special opportunities for small business entrepreneurs and for tourism developers and promoters);
- promote, to the maximum extent possible, the private sector as the agent of delivery of environmental services; and
- harmonize with market forces.

To this end, ISTC has established an Environmental Regulatory Affairs Directorate, and has signed a formal undertaking with Environment Canada that ensures early discussion by the two departments of new environmental regulations and their implications for industrial competitiveness.

For example, ISTC will work with Environment Canada to ensure that any regulatory action with respect to the "Priority Substances List" of the *Canadian Environmental Protection Act* gives industry as much flexibility as possible. Environment Canada expects to have completed its evaluation of the toxicity of all 44 substances on the List by 1994. Industries associated with these substances include pulp and paper, ferrous and non-ferrous metal smelting and refining, fabricated metals, textiles, petroleum refining, chemicals, and electrical utilities. These sectors are significant employers, both nationally and regionally, and make an important contribution to the economy. In participating in the evaluation process, ISTC will receive technical assistance from the National Research Council under another formal arrangement.

ISTC is also working with Environment Canada in the development and implementation of initiatives that address the following:

- new chemical or biological substances introduced into industry in Canada;
- tropospheric and stratospheric ozone; and
- hazardous and non-hazardous waste management, including specific concerns about packaging and the international movement of waste materials.

Increasingly, many of Canada's regulatory reforms are being shaped by international conventions and protocols, such as the Montreal Protocol. Because the orientation of subsequent domestic regulations must satisfy the objectives and schedules of these international agreements, ISTC is playing an active role in defining the economic aspects of Canada's position on international initiatives. ISTC will work with Environment Canada and External Affairs and International Trade Canada to seek multilateral solutions to environmental problems that are global in nature.

New Science and Technologies

The environmental agendas of governments will drive the demand for new science, technologies, equipment and services. To complement its role in the formulation of environmental policy and regulatory initiatives, ISTC will promote the development and application of pollution abatement and new, cleaner, more-efficient technologies and processes, and the science required to underpin these developments.

The presence within ISTC of Canada's first-ever Minister for Science gives the department a strong voice in the orientation of federal science and technology expenditures, which exceeded \$5 billion in 1989-90. ISTC will seek a balanced approach to federal environmental initiatives affecting science and technology, advocating that resources be devoted to the development of solutions as well as to the monitoring and assessment of environmental problems.

Many of ISTC's programs are consistent with sustainable development because, among other things, they encourage the development of new scientific knowledge and technologies that are based on a more efficient use of resources. Noteworthy is the St. Lawrence River Environmental Technology Development Program (ETDP), which represents a financial commitment of \$18 million over five years toward the development of water pollution abatement technologies. This program has been incorporated into the St. Lawrence River Action Plan, which was launched by the Government of Canada, in collaboration with the Province of Quebec, in 1988.

ISTC's commitment to ongoing consultation with its clients is producing positive results. For example, in view of the special environmental challenges facing the pulp and paper industry, the department has signed a research and

technology development agreement with the Pulp and Paper Research Institute of Canada. ISTC is also developing cooperative Memoranda of Understanding with major forest products companies to support the development and implementation of technologies that will improve both the economic and environmental performance of this key sector.

To foster the development of environmental science and technology, ISTC is examining a number of approaches, including the following:

- encouraging the formation of environmental research consortia and information-sharing organizations;
- enlisting support from the National Research Council and other research councils for solutions-oriented environmental science and technology;
- collaborating with the granting councils (which provide funding for university research in the natural sciences and engineering, medical research, and the social sciences and humanities), matching environmental research needs with expertise and university-industry alliances; and
- financial matchmaking to assist the commercialization and diffusion of new technologies (e.g. venture capitalists or federal sources of funding).

A Canadian Environmental Industry

ISTC is also making an important contribution to sustainable development by promoting the development of a world-class environmental industry in Canada. The department has established a division dedicated to the promotion of the industry and, as a focal point for the industry's development, has launched the Environmental Industries Sector Initiative.

As part of the Initiative, information is being generated on the industry's economic characteristics, critical technologies and potential markets. The Canadian market alone for environmental goods and services has been conservatively estimated at about 7 to \$10 billion, which represents a solid opportunity for Canadian entrepreneurs. ISTC is also using the Initiative to develop a consensus within the private sector, the research community and the federal and provincial governments on how best to encourage the growth of the new industry.

To help satisfy the increasing demand for information and market intelligence that the Initiative has generated, ISTC is accelerating the completion of a number of projects. These include the following:

- domestic and international market information for environmental goods and services;
- directories of firms supplying environmental equipment and services;
- reports on new and emerging environmental technologies; and
- a summary, in collaboration with the Conference Board of Canada, of the business opportunities arising from the Globe '90 environmental trade fair and conference, which ISTC co-sponsored.

In 1991, ISTC will formulate a coordinated approach to the growth and development of Canada's environmental industry, building on the partnerships that have been developed among federal and provincial governments, industry and the science community.

This booklet outlines how ISTC is positioning itself to facilitate the transition to sustainable development. The department will continue to speak strongly within the federal government to ensure there is an integration of all relevant environmental and economic information in federal decision making. It will also develop new ways to help its business and science clients meet the challenges and profit from the opportunities that will arise from the Government of Canada's environmental program. With the full collaboration of governments, industry and the science community, Canadians should be able to look forward to a cleaner environment, while maintaining a strong, competitive economy.

Information Sources

For information on the Environmental Industries Sector Initiative, please contact:

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For general information on ISTC policies, programs and services related to the Green Plan, contact one of the Business Service Centres listed below.

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