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ENVIRONMENTAL ACTION HANDBOOK



AN OPERATIONAL GUIDE FOR BUSINESS

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AN OPERATIONAL GUIDE FOR BUSINESS

Prepared for

Industry, Science and Technology Canada
British Columbia

Prepared by

PEAT MARWICK STEVENSON & KELLOGG

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I Introduction

*"The great thing
in this world is
not so much where
we stand as in
what direction we
are moving."*

~ Oliver Wendell Holmes

A. Environmental concern is here to stay

Public concern for the environment has risen dramatically in recent years and there is every indication that it will remain high in the future. Three trends illustrate this point:

- The environment has become a priority. Individuals from all sectors of society, including business and industry, are advocating better environmental protection.
- Politicians and government leaders have responded with major environmental commitments. These commitments will likely result in new environmental legislation and enforcement that make business and consumers more aware of the environmental consequences of their actions.
- Environmental issues are now being taught to children in the primary and secondary school system. Their eventual emergence as major decision makers in society will ensure that future environmental matters receive a high level of importance.

In view of these trends, it is becoming increasingly important for companies to build environmental responsibility into their daily activities. While many have made the commitment, it is often difficult to translate broad environmental concerns into action. It is for this reason that Industry Science and Technology Canada, British Columbia commissioned Peat Marwick Stevenson & Kellogg to prepare this document. A primary goal of Industry, Science and Technology Canada is to help improve the performance and competitiveness of Canadian firms. As we will describe in this handbook, many companies are finding that by improving their environmental performance, they also improve their economic performance.

B. This handbook is an operational tool

This handbook is an action oriented planning guide designed to help companies in British Columbia put environmental responsibility into practice in their operations. It is relevant to firms of all sizes or industry sectors. It presents a broad action planning framework and works through each component in a straight forward, step-by-step manner.

The handbook follows from a previous report that Peat Marwick Stevenson & Kellogg recently prepared for Industry, Science and Technology Canada, British Columbia. This earlier document presented a strategic overview of the many business opportunities resulting from changing consumer attitudes toward the environment. This handbook builds on and translates those strategies into specific action steps at the operational level.

The information is presented in a workbook format for easy reference and understanding. Where possible, tables, diagrams, and bullets are used to minimize the volume of written material. Sidebars present innovative environmental ideas and quotations. The action steps outlined in the handbook are meant simply as guidelines and can be readily adapted to suit the particular needs of your company.

II Framework For Action

*"There are many ways
of going forward,
but only one way
of standing still."*

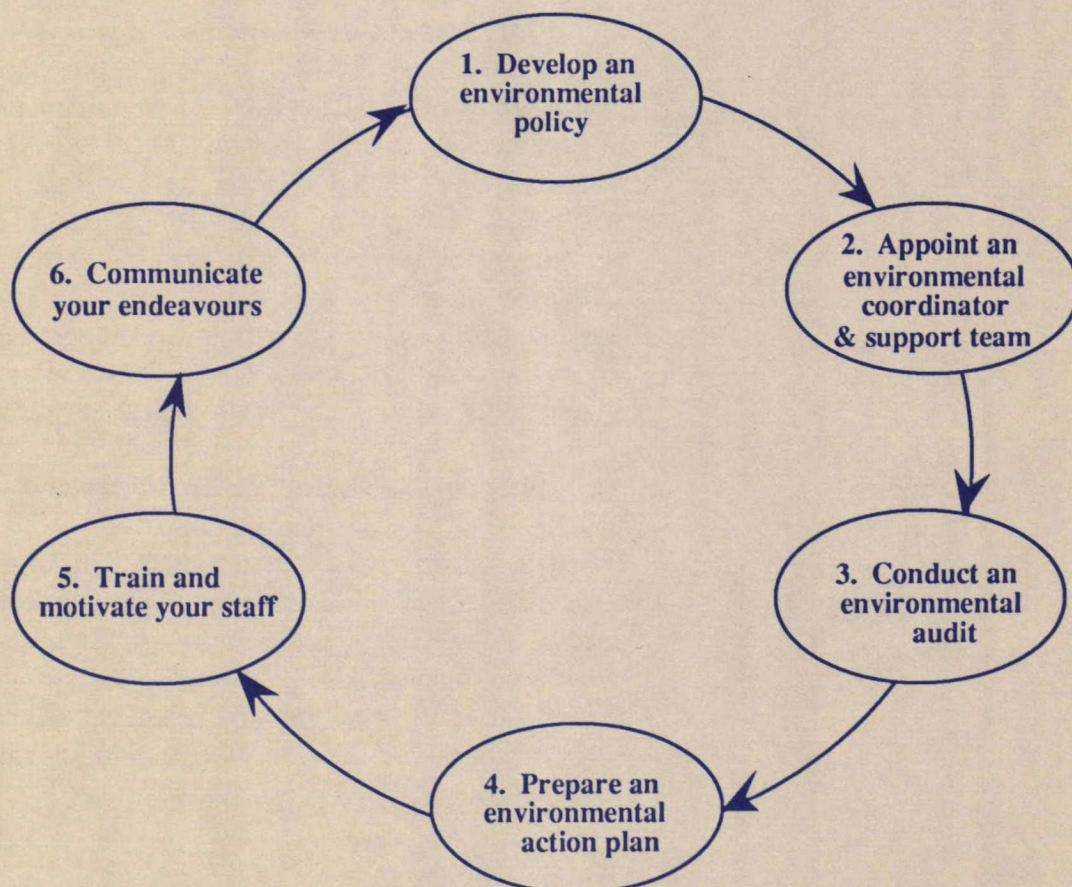
~ Franklin D Roosevelt

A. Six steps to environmental success

While there are literally hundreds of ways to introduce environmental improvements in your company, they can largely be grouped into six common sequential steps. These steps are illustrated in Exhibit II-1 and described briefly below.

Exhibit II - 1

Six steps to corporate environmental excellence



1. Develop an environmental policy

The first step is to document your environmental "mission" in a brief, clearly-worded policy statement. The statement demonstrates your firm's corporate commitment and legitimizes subsequent tasks. The environmental policy should clearly state your position on the environment, your environmental achievements, and guidelines for responsible action by your employees.

2. Appoint an environmental coordinator and supporting team

To ensure that the company adheres to its environmental policy, you will need to appoint a senior level environmental coordinator. You should also assemble an environmental team that will support the environmental coordinator. The best environmental team includes representatives from each major department and geographic location within the firm.

3. Conduct an environmental audit

The next step is to conduct a review of your operations to determine the state of the environment in your firm. The environmental audit is used to ensure compliance with environmental laws, evaluate the effectiveness of environmental management systems, outline ways to minimize waste and conserve energy, and identify possible liabilities with buildings and property in real estate transactions. As a monitoring tool, the audit should be documented and repeated on a periodic basis.

4. Prepare an environmental action plan

Based on the results of the environment audit, you need to develop a detailed action plan. This plan outlines specific tasks to be completed as well as associated costs, time frames, and responsibilities to ensure completion. It is important that the tasks are assigned to staff members with the authority, motivation, and resources to successfully complete the job.

5. Train and motivate your staff

Your staff must be informed about the environmental policy and action plan and be heavily involved in implementing them. Specifically, they must be trained on how to make environmental improvements in their respective areas. Employees must also be recognized and rewarded for making required changes. Only in this way they be convinced of the firm's commitment and be motivated to repeat the desired behaviours.

6. Communicate your endeavours

It is important to communicate your environmental endeavours externally, both to your customers and the general public. As long as you are modest about your efforts and accurate in your claims, your communications will significantly improve your public image and customer loyalty.

B. Achieving environmental success is a continuous process

Because environmental issues are changing rapidly, it is not enough simply to complete the six steps outlined above. As the diagram illustrates, you must continually repeat the cycle. Only in this manner will you be truly incorporating environmental responsibility into your corporate decision making structure.

These six steps form the underlying framework by which any firm, regardless of size or industry, can improve its environmental performance and reap the rewards. We have therefore structured this handbook so that each of the remaining chapters corresponds to a separate work step.

C. Benefits of a corporate greening strategy

Initiating a corporate greening strategy for your organization will produce many direct and indirect benefits. In particular, it will:

- Improve your corporate image.
- Increase customer loyalty.
- Boost staff loyalty and commitment to your firm.
- Increase staff productivity.
- Reduce staff turnover.
- Boost sales of your products and services.
- Help identify future market opportunities.
- Improve the efficiency of your processes.
- Reduce operating expenses.
- Reduce risk of liability for environmental damage.
- Minimize your impact on the environment.
- Attract highly qualified and motivated staff.
- Satisfying investor and lender environmental liability concerns.

Perhaps the greatest benefit of a corporate greening strategy is that it can improve the overall competitiveness of your firm. This point is elaborated in the following section.

D. Environmental commitment improves competitiveness

While virtually all companies agree that there are benefits to initiating corporate greening strategies, there is less agreement about the point at which the costs outweigh the benefits. In Exhibit II-2, we present three levels of corporate environmental commitment.

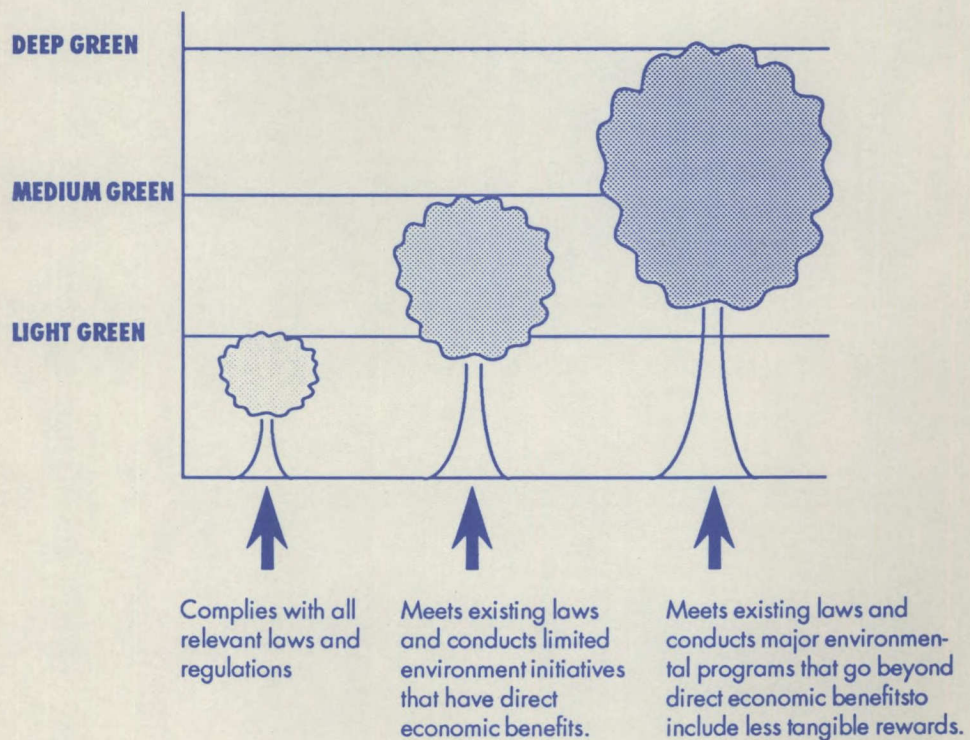
There is a growing body of evidence that firms that follow the “deep green” path will reap the greatest rewards. Business is quickly realizing that many of the most financially successful companies also have the best record of environmental performance. Firms in the “light green” and, to a lesser degree, “medium green” categories will simply not be taken seriously by a society that is becoming increasingly environmentally conscious.

Perhaps the strongest proof that environmental protection does not inhibit competitiveness is the economic performance of countries with the toughest environmental regulations. Both Germany and Japan have strict laws yet they continue to maintain the best rates of productivity growth in the world.

If environmental experts are correct in their prediction that we have only one generation left to make the transition to a sustainable planet, business cannot be satisfied with making small changes. In the long run, only the changes that count are going to improve the competitiveness of your firm.

Exhibit II-2

Spectrum of environmental commitment: where does your company fit?



III Developing An Environmental Policy

"Corporations that think they can drag their heels indefinitely on environmental problems should be advised: society won't tolerate it ... companies with real sensitivity and environmental commitment will be there to supply your customers after you're gone."

*~ E.S. Woolard,
Chairman of Dupont*

A. What is an environmental policy?

An environmental policy is a well formulated, succinct document that outlines the guiding philosophy and commitment of your company with respect to the environment. It may be contained on a single page and should:

- Clearly state your firm's position on the environment.
- Include previous or current environmental accomplishments.
- Provide clear direction for future activities.
- Offer guidelines for responsible actions by your employees.
- Demonstrate commitment by your staff.

The environmental policy demonstrates senior staff commitment and legitimizes subsequent tasks.

B. Define your objectives

The first step in establishing an environmental policy is to define your objectives. These will be determined, to some degree, by the type of business in which you are engaged. Possible objectives for preparing an environmental policy may be to:

- Improve your public image.
- Provide guiding principles to your employees concerning their activities.

- Set environmental standards by which your suppliers and contractors must abide.
- Initiate a corporate greening process based on sound research and analysis.

C. Identify the major environmental issues

It is important to identify major environmental issues that are specific to your company. Once the issues have been identified, it is necessary to determine your firm's position with respect to these issues. Communication among all levels of staff will permit consensus on the issues identified.

Your firm must next identify the tools necessary to assist staff in responding to the issues. Such tools might include round table discussions or workshops with an external facilitator. Another effective tool is to develop a matrix that compares business activities with different components of the environment (air, land, etc.). A sample matrix is provided below in Exhibit III-1.

Exhibit III-1

Business-environment matrix

| Business Activity/ Environmental Issue | Human Resources | Marketing | Finance | Production | Strategic Management | Information Systems |
|---|--------------------|-----------|---------|------------|-------------------------|------------------------|
| Air | | | | | | |
| Water | | | | | | |
| Land | | | | | | |
| Waste | | | | | | |
| Energy | | | | | | |
| Natural Resources | | | | | | |
| Fish and Wildlife | | | | | | |

D. Review examples of environmental policies

To facilitate the process and to determine the positioning of potential competitors, it is helpful to collect and review samples of environmental policy statements developed by other companies. Sample policies should be collected from a number of different industry sectors to provide a balanced view. While one industry may take a common approach to a specific issue (e.g., public involvement in the decision making process), other industry sectors may adopt a more progressive and proactive approach to the same issue.

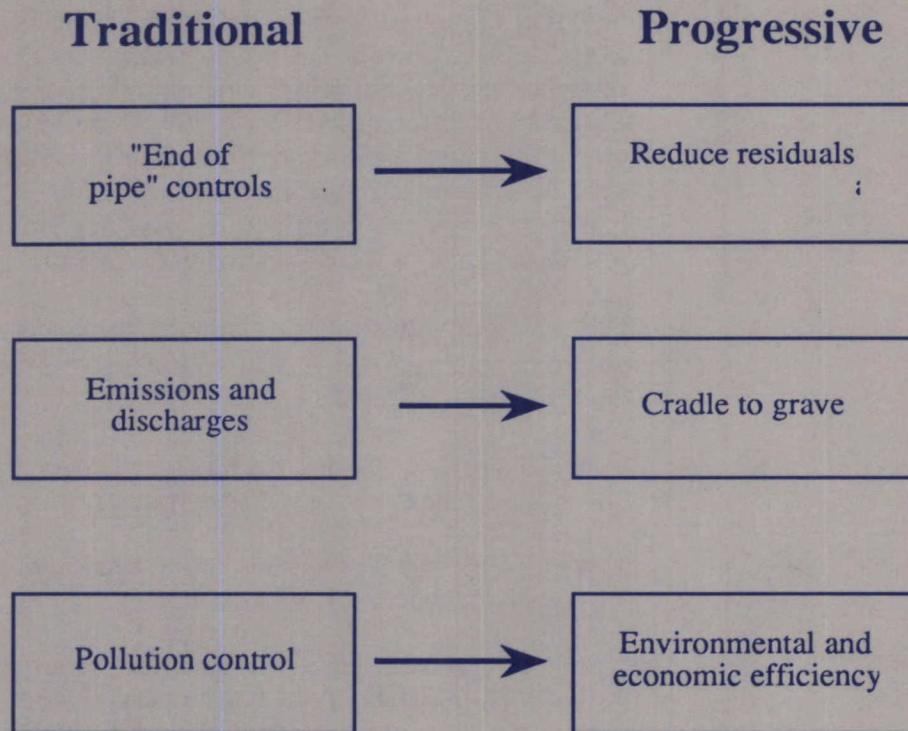
Contact your industry association to obtain a sample of environmental policies. The following are examples of environmental policy statements:

- To be perceived as the most environmentally aware and active company in our industry or market.
- To operate all facilities above regulatory requirements whenever possible.
- To maintain the highest standards for the ongoing health and safety of our employees, our customers, the communities in which we operate and the environment.
- To incorporate environmental concerns in all corporate planning activities.
- To emphasize measures that prevent environmental damage rather than cleaning up pollution that has already occurred (see Exhibit III-2).
- To minimize the environmental impact of operations.
- To improve the level of internal communication, education and/or consultation.
- To work with government in developing new regulations and legislation that affects the industry.
- To support environmental research and development.

An excellent example of an environmental policy is provided by the British Columbia Telephone Company in Exhibit III-3.

Exhibit III-2

Traditional versus progressive environmental management policies



E. Prepare the environmental policy

Policy statements that include a rationale that justifies the need and importance of the respective policies, as well as action plans, are most effective. Some "do's" and "don'ts" in drafting the text are provided as follows:

- Be pro-active, not reactive – pro-active policy will help mitigate attacks from government, environmental groups and media.
- Be action-oriented with clearly defined goals – action oriented policy goes beyond simply issuing a policy statement, and can improve the credibility and perception of your company.

Exhibit III-3

Environmental policy for British Columbia Telephone Company (BC Tel)



Recognizing that the Environment Belongs to Future Generations,

Our Commitment is to:

- Show leadership in dealing with our environmental issues.
- Integrate environmental protection and improvements into our plans and operations.
- Meet or exceed federal, provincial and municipal environmental standards.
- Deal with environmental issues at the time of purchase in preference to the time of disposal, utilizing our environmental purchasing policy.
- Encourage employees to be innovative and action-oriented in identifying and addressing our environmental challenges.
- Work together with our employees, our customers and government on environmental issues related to our business.
- Share our progress with our employees, the public and the business community, to increase environmental awareness and to share environmental solutions.

GA00692-01

**The
B.C.Tel
Group**

ECO-LOGICAL IDEA...

Engrave the environmental policy on attractive, wooden "earthy" wall plaques and hang them at strategic places in your premises.

- Involve all your staff—staff who participate in the preparation of an environmental policy are more likely to be committed to this policy.
- Include clear, concise statements of your firm's position on the environment—avoid generalities and motherhood statements which promote ambiguity and indicate a lack of commitment by your firm.
- Follow up with a concrete action plan for senior management and all employees—the greatest impact of an environmental policy will be seen if there are concrete action plans in place, towards which progress can be measured. This is discussed in greater detail in Chapter VI.

The first draft should be circulated to the upper and middle management levels of your company for review. Further, it should be reviewed by outside, unbiased individuals or groups. You may also want to discuss it with respected environmentalists who encourage cooperative relationships between business and the environmental community.

Once the final draft of the environmental policy has been agreed upon, it should be distributed to all employees, shareholders, customers, suppliers and the general public. To maintain or build your credibility with the public you may choose to hold back on external distribution of the policy until you have put your environmental affairs clearly in order, e.g., after completing the first year of your new environmental programs.

F. Review and update the policy

It is important to monitor your staff to ensure that the policy is being consistently and continually applied throughout your firm. Without follow-up, the environmental policy will quickly lose its value.

It is also important to review the policy annually to ensure that it reflects the changing environmental realities within and beyond your firm.

IV Assembling The Environmental Team

*"Never doubt that a small
group of thoughtful,
committed individuals
can change the world.
Indeed, it's the only
thing that ever has."*

~ Margaret Mead



A. Appoint an Environmental Coordinator

The first step in assembling an environmental team is to appoint an Environmental Coordinator. The primary role of this individual is to ensure that environmental initiatives are introduced and maintained in a coordinated and interdisciplinary manner throughout the company.

Depending on the size of your organization, you may wish to assign the position to an existing staff member who maintains other duties, or hire a new employee that works solely on environmental initiatives for the firm.

This individual should be a senior management level employee with sufficient authority and resources to make decisions quickly and efficiently. He or she should be energetic, innovation-seeking and committed to environmental issues. Although titles such as Environment Vice-President, Environmental Affairs Manager, or Environmental Director may be used, the duties are generally the same. Some of the coordinator's more common duties are to:

- Participate in internal and external environment-related committees.
- Make presentations to external audiences about the company's activities.
- Participate in staff training on environmental issues.
- Oversee environmental audits.
- Prepare environmental action plan based on feedback from the environmental team.

ECO-LOGICAL IDEA...

Label your team an
"Environmental Quality Circle"
to demonstrate that
environmental protection is
a key element of quality.

- Coordinate consultant activities.
- Review policies, practices, and procedures.
- Work with operations staff to innovate products or services to make them more environmentally sound.
- Monitor and report environmental achievements on a routine basis.

As can be observed, these duties are much broader than those associated with the Environmental "Safety Officer" that is appointed by some firms to ensure compliance with existing laws and regulations.

B. Select the remaining team members

The remaining team members should be selected from a wide cross section of functional departments within your firm. This is because every department has a role to play in solving environmental problems. Typical membership of the environmental team is shown in Exhibit IV-1.

While the above participation mix is optimal, you would be wiser to settle for a less "well-rounded" team of committed individuals (e.g., two members from one department and none from another) than to impose an optimal participation mix of less eager people.

In some firms, the Environmental Team is composed of members of the Safety Committee as environmental and safety issues are often related.

The purpose of the Environmental Team is to advise senior management on environmental issues and to support the Environmental Coordinator. Specifically, the duties of the team are to:

- Plan and coordinate the environmental audit.
- Develop the environmental action plan.
- Monitor and report progress.

Exhibit IV- 1

Membership of environmental team

| DEPARTMENT | REASON FOR BEING INCLUDED |
|---|---|
| Corporate Planning Department | Environmental initiative must be incorporated into corporate decision making. |
| Finance/ Accounting Department | Sufficient financial resources must be allocated to implement environmental changes. |
| Maintenance Department | Maintenance staff have major control over waste reduction and energy or water conservation. |
| Marketing/ Communications Department | Your company can improve its image and profile by communicating its environmental endeavours. |
| Personnel Department | The environment affects all employees and they must be kept informed and encouraged to participate. |
| Production Department | Operational staff have major opportunities to reduce environmental impacts and innovate their products or services to make them more environmentally sound. |
| Purchasing Department | Many opportunities exist to reduce total purchases and switch to alternative products that are more kind to the environment. |

ECO-LOGICAL IDEA...

A unanimous vote
on a particular
environmental measure is
much better than a
decision made by a
slender majority,
bearing the seeds
of dissension.

C. Provide corporate support

To ensure the success of the Environmental Team, it is imperative that it be given a high degree of support from the top levels of your firm. This will create the necessary expectation among staff that the environmental committee has the authority and backing to produce significant and tangible results. Some ways in which senior management can demonstrate its support include the following:

- Provide detailed information about the purpose and objectives of the Environmental Team to all employees.
- Provide ongoing and active support to the Environmental Coordinator.
- Allocate sufficient resources to allow the Team to implement an adequate environmental action program and communicate its achievements internally and externally.
- Place a high priority on quickly resolving conflicts between environmental and departmental objectives.
- Recognize the achievements of the Environmental Team at every possible opportunity.

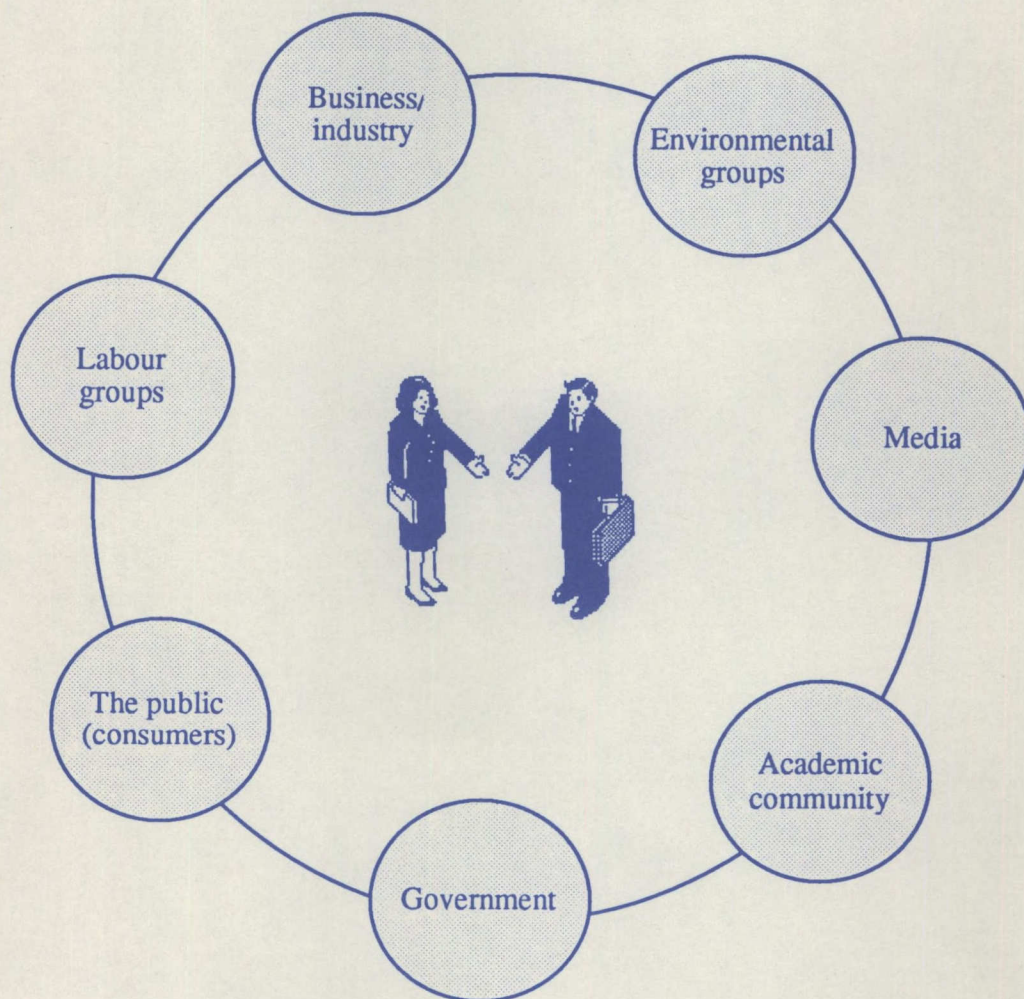
On the former point, it is important not to stress the accomplishments of the Environmental Team over and above the efforts of other staff members. Environmental initiatives require everybody's involvement and recognition should be distributed as widely as possible throughout your firm.

D. Cooperate with outside "teammembers"

To fulfill its duties, the Environmental Team must network with a variety of societal groups (see Exhibit IV-2). These include government, environmental groups, the academic community, the media, labour groups and the public (consumers). In the past, these groups have often been viewed as adversaries. However, it is now accepted that each has a vital interest in the environment and it is only by cooperating with them that we will solve our environmental problems.

Exhibit IV-2

Cooperative approach to environmental management among societal groups



V Conducting An Environmental Audit

"A sustainable society is one that satisfies its needs without jeopardizing the prospects for future generations. Inherent in this definition is the responsibility of each generation to ensure that the next one inherits an undiminished natural and economic endowment."

*~ Lester Brown
Worldwatch Institute*

A. What is an environmental audit?

An environmental audit or performance review (hereafter referred to as an "audit") is an objective, routine review of your operations, to determine corporate environmental performance with external environmental legislation and your own internal environmental policies and standards. Before an audit is undertaken, it is necessary to:

- Identify the processes involved in your business.
- Establish a clear set of objectives and plans.
- Determine the terms of reference for the audit, including scope and structure.
- Develop the procedures necessary to implement the audit.

The audit can help your company to:

- Identify whether environmental objectives are being achieved and, if not, why.
- Reduce exposure to litigation.
- Increase employee awareness of environmental policies and responsibilities.
- Evaluate regulatory compliance.
- Identify measures that improve your environmental performance and simultaneously reduce costs.
- Develop an information base to be used in the event of an emergency.
- Improve management awareness and decision making abilities.

- Recognize and reward good environmental performance.
- Improve relations with regulatory bodies and the community.
- Assess/evaluate liabilities and risks.
- Meet requirements of lending institutions.
- Satisfy ethical or risk-conscious investors.

In some businesses, such as industrial real estate, an environmental audit can be an essential tool in risk management .

B. Environmental audits versus financial audits

Environmental audits are commonly thought to be similar to statutory financial audits. In fact, environmental audits are currently very different from financial audits. These differences are outlined in Exhibit V-1.

Exhibit V-1

Environmental and financial audits compared

| Financial Audit | Environmental Audit |
|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Statutory requirements <input type="checkbox"/> Annual event <input type="checkbox"/> Attestation to a statement <input type="checkbox"/> Conducted by external body and published <input type="checkbox"/> Range of standards, rules, legislation <input type="checkbox"/> Statutory minimum work required before attestation can be given | <ul style="list-style-type: none"> <input type="checkbox"/> Voluntary action <input type="checkbox"/> No fixed timetable <input type="checkbox"/> Provides advice and recommendations <input type="checkbox"/> Internal management tool <input type="checkbox"/> Few rules and standards at present <input type="checkbox"/> Work requirement negotiated individually |

A number of pressures are developing to change environmental auditing to follow more closely the financial audit model. These pressures will likely result in two separate environmental audit processes, geared to suit the different needs of business managers and outside parties. This will parallel the system of internal and external financial audits. As with financial audits, it is likely that the performance review and attestation will be carried out by separate organizations.

C. Determine the parameters of the audit

The audit must be tailored to your individual company's needs, with the parameters strongly linked to your established objectives. It is therefore important to identify your exact requirements prior to selecting the type of audit. (The basic types of environmental audits are presented in Exhibit V-2.) For example:

- Regulatory bodies require a certain level of detail on compliance audits whereas the Board of Directors of a company may require more detailed management audits that analyze all aspects of the organization.
- A real estate purchase may require a title search going back fifty years to determine previous uses of the property if pollution is suspected.
- A waste minimization audit may require research into new trends or technologies in Japan or Europe that can be adapted for use at your facility. This may be conducted on a thorough basis the first time, after which individuals responsible for certain areas will be expected to keep on top of new products and technologies and respond accordingly.

In determining the parameters of the audit, it is necessary to consider the following:

- Degree of analysis (compliance, managerial, comprehensive).

Exhibit V-2

Types of environmental audits

1. Compliance audit

The purpose of a compliance audit is to ensure adherence to all relevant environmental laws, standards and guidelines. These may include:

- Permit and reporting requirements.
- Restrictions on air and water discharges and waste disposal practices.
- Regulatory limitations on operations.
- Monitoring requirements.
- Self reporting of violations.

The compliance audit is very focused as it is typically used to determine whether or not a company is meeting regulated standards. It may be expanded to include internal as well as external compliance with prescribed policies and procedures. It can be conducted by site, by group or by company.

2. Management audit

The purpose of the management audit is to assess the effectiveness of internal management systems, corporate policies and risks associated with materials management. For example, although disposal of certain toxic wastes may not be regulated, significant environmental impacts may arise if handling procedures are not tightly controlled.

The types of parameters that may be assessed include:

- The general state of equipment, plant, materials and storage areas.
- Evidence of the reliability and performance of processes.
- The quality of operations and operating procedures.
- The state of records on emissions, spills, effluents and waste.
- Details of off-site disposal.
- Review of infringements or conflicts with authorities or the local community.

The management audit is designed to ensure that your company is conforming to existing laws and regulations, as well as developing proactive policies to mitigate environmental hazards. The audit may evolve within an organization from a simple compliance audit to the more thorough management audit.

Exhibit V-2 (cont'd)

Types of environmental audits

3. Procurement audit

The purpose of the procurement audit is to review your purchasing practices and identify alternative products and equipment that have less impact on the environment. It may be conducted on its own or as part of a waste minimization audit. This audit is typically done with the purchasing department staff. They determine whether an item is essential, what options are available to reduce consumption, what new product substitutes are available and what their respective costs and environmental impacts are.

It is important to develop a "cradle to grave" approach when reviewing alternative products to ensure that they are significantly better for the environment. This involves looking at the environmental impacts of products from the extraction stage, through processing, manufacturing, shipping, utilization and disposal.

4. Real estate audit

A real estate audit is designed to identify potential environmental liabilities if the property had been used as a storage site for toxic materials. This information is essential to determine the true value of the real estate and, if necessary, conduct clean-up activities. The cost of the real estate audit is often less than the legal costs that could be incurred in a court battle to assign responsibility for clean-up, or the cost of the clean-up itself.

This type of audit is becoming a mandatory requirement in many real estate transactions where the presence of contaminants is suspected.

5. Waste minimization audit

The purpose of the waste minimization audit is to reduce the amount of waste generated and disposed from your operations. It includes a detailed quantitative and qualitative analysis of purchasing practices, processes, and waste streams. Opportunities are then identified for the reduction, reuse and recycling, in that order (see Appendix A), for both the materials and supplies purchased and by-products produced.

6. Water conservation audit

The goal of a water conservation audit is to identify all sources of water use and look at ways to reduce total consumption through reduction, reuse and recycling efforts.

7. Energy conservation audit

The energy conservation audit allows you to track the energy consumption in your firm. Consumption of electricity, gas and fuel oils and any other types of energy should be identified, quantified and minimized, where possible.

8. Supplier audit

The purpose of a supplier audit is to assess the environment performance of existing and potential business partners. They are used most often in the retail sector.

D. Develop the audit protocol

Once the parameters of the audit have been determined, you are ready to develop the audit protocol. The protocol will:

- Provide guidance to the auditors. (The auditors may be your internal staff or they may be outside consultants.)
- Focus the review on the items of importance.
- Ensure that the review meets the objectives established at the beginning of the audit program.

The following items should be addressed when developing the audit protocol.

1. Background information requirements

Information must be compiled on the history of your firms' operations and internal organization.

2. Initial contact

If an external audit is undertaken, the audit team should contact the department to be audited in advance, to:

- Obtain its cooperation.
- Determine who is to be the prime liaison within the department.
- Specify the type and depth of information to be discussed.
- Determine lead times between initial contacts and site visits.
- Designate who will be responsible for informing staff about the audit, i.e., senior management within the firm, the audit team or whomever.

If you conduct an internal audit, the initial contact and subsequent steps may be undertaken on a less formal basis.

3. Issue resolution

Members of the audit team must be informed about how problems within the firm have been dealt with in the past, and instructed in how to deal with future problems. For example, if human error is found to be the source of exceeding toxic emission regulations in a compliance audit, the audit team must be supportive, positive, and have direction as to how to report the situation.

4. Data collection, documentation and analysis

Methods for data collection and handling procedures must be established. Methods include personal interviews, surveys, documentation of existing information and inspections. The choice of methods and analysis will depend on the type of firm being audited and the objectives of the audit.

A clearly stated audit protocol provides the audit team with a consistent set of instructions on the steps to be undertaken, areas to review and items to be addressed. The type and complexity of protocol required depends on the following:

- Type of industry being audited.
- Comprehensiveness of the audit.
- Skill of the auditor.
- Reasons for the audit.
- Time and budgetary constraints.

E. Select audit team

The effectiveness of the audit program is a direct result of the confidence, training, expertise and proficiency of the individuals who conduct the audit. The chosen individuals should have the technical and regulatory knowledge commensurate with the audit scope and the complexity of the facility to be audited. They must be both professional and objective when conducting the work.

It is important that the team include members with a sufficiently diverse background to allow all issues identified to be addressed in detail.

Issues to resolve include:

1. Internal versus external personnel

External personnel can maintain objectivity and are not involved with the day-to-day financial affairs of the organization—both important considerations. However, it is also important to have a thorough understanding of the facility and the operations. Therefore, as a minimum, the audit team should include one internal staff member to liaise with the audit team. It is necessary to determine his/her position and background in the firm. This will include number of years within the organization, level of education, and ability and experience to work in a team environment.

The make-up of the remainder of the team should be determined by the type of audit and the requirements of the user.

2. Size and composition of the team

The scope of the audit and size of the facility to be audited will determine the size and composition of the team. A small job may only require one person whereas a corporate-wide management audit may require a team of up to five types of people—an in-house staff member, an engineer, an environmental scientist, a lawyer, an accountant, and an individual trained in business management who can synthesize the information.

F. Conduct the audit

Conducting the audit requires that objectives, parameters and procedures be determined. If this preparatory work is properly completed, conducting the audit is relatively straight forward. There are three basic components of this task:

- **Pre-visit preparation**—this stage includes review of audit procedures and relevant legislation by the audit team; submission of pre-visit questionnaires where necessary; and development of an audit agenda and schedule that includes the assignment of responsibilities to audit team members.
- **On-site activities**—at this stage briefing meetings, site tours, interviews, document revisions, and post audit debriefing occur. Frequently tours, interviews and paper reviews are iterative, since verification or follow-up information is often required.
- **Post-visit summary**—following completion of on-site data collection activities, auditors should review the findings and prepare a preliminary summary to present to management. This summary should alert the facility to issues of concern that have been identified and indicate the extent and nature of environmental problems.

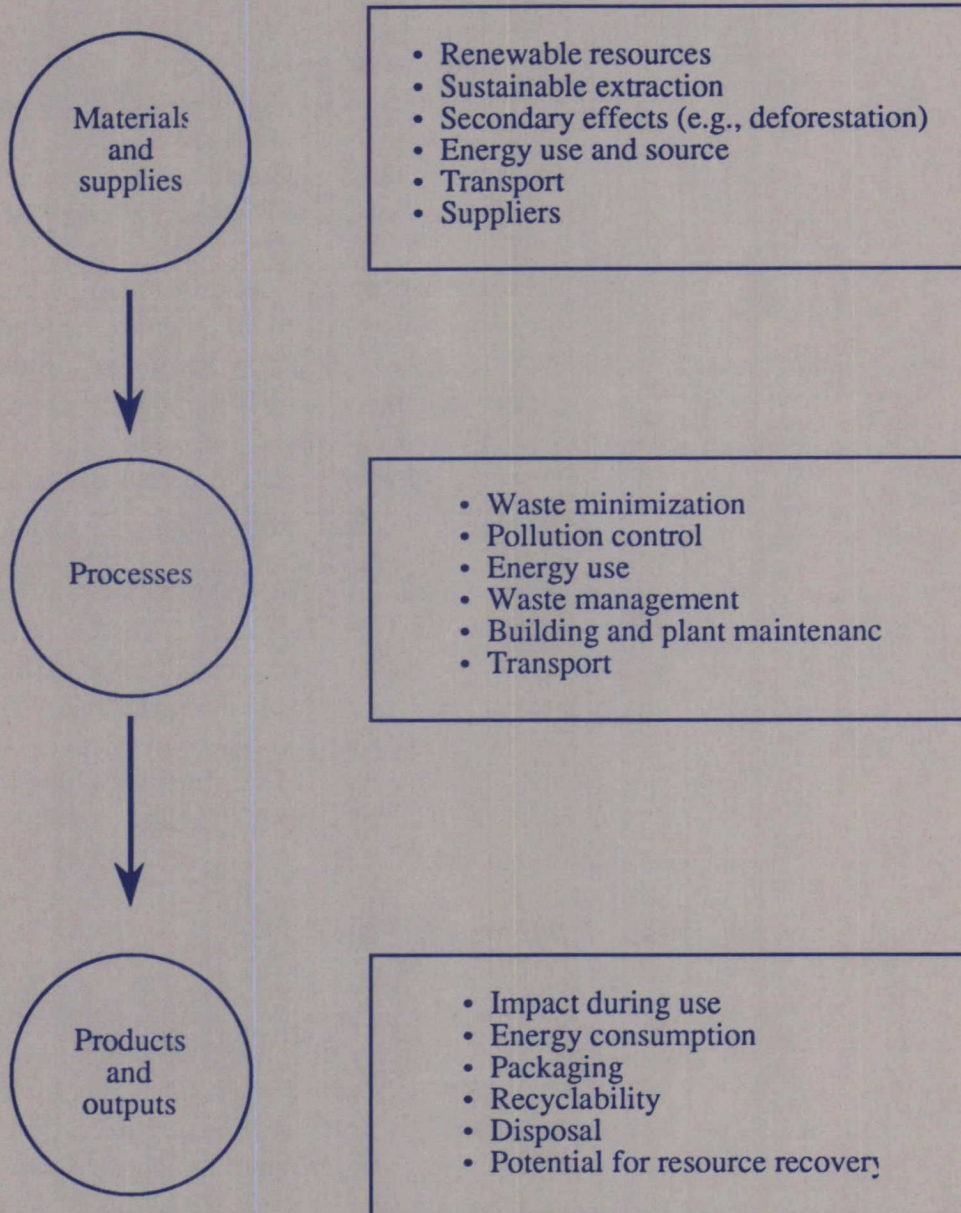
An overview of some key elements to address in an environmental audit are illustrated in Exhibit V-3. A more detailed checklist that you can use to conduct your own internal environmental audit is provided in Appendix B. While it is often sufficient to conduct your audit internally, it is sometimes appropriate to use outside specialists. A selection of consulting firms that can help you conduct an audit is provided in Appendix C.

G. Write audit report

Following a preliminary summary report, auditors must identify issues requiring remediation and address these concerns in the final report. The style of the audit report should be direct, factual and informative. All problems should be clearly stated. For example, “emissions of NO_x exceeded regulatory limits by 12% at stack #2 at site A on the day sampled.” Ensure that the report is fully supported by the data. Avoid conjecture and extrapolation as this can lead to false interpretation.

Exhibit V-3

The environmental audit – key element to address



When the audit is complete, an audit completion meeting should be held to discuss findings with facility management. This will improve their level of awareness of both the findings and the significance to the company.

The audit report should be prepared by the audit team leader. Draft copies of the report should be distributed to other team members and facility management to evaluate accuracy. The final report should then be prepared and presented to the environmental committee and/or management.

H. Repeat audit regularly

The audit, like a balance sheet, presents a snapshot of a company's environmental performance at a particular point in time. Audits should be conducted on a regular basis to make comparisons and identify improvements.

The frequency of audits should be determined by such issues as the rate of change in relevant technologies, or the need to conform to standards within a given time period. Thus, when upgrading facilities to meet regulations, consider conducting another audit after the new equipment is up and running to verify that it does, in fact, perform to specification.

VI Preparing An Environmental Action Plan

"There really can be no further excuse for inaction. Every chief executive of every company should start tomorrow, preparing plans for environmental action."

*~ Anthony Cleaves,
C.E.O., IBM U.K.*

A. The action planning process

The purpose of the action plan is to translate the results of the audit into practical strategies that your employees can follow. A well developed action plan will contain both strategic planning and implementation planning components. An overview of the action planning process is provided in Exhibit VI-1.

As with any planning process, you begin by gaining consensus on the key issues and by establishing goals and objectives. You then develop strategies and tactics. While goals and objectives identify what you are going to do, strategies and tactics identify how you are going to do it. Finally, you assign costs, time frames and responsibilities. As shown in Exhibit VI-1, each level of the planning process must support the level above it and all must support and adhere to the company-wide environmental policy discussed in Chapter III.

B. Develop goals and objectives

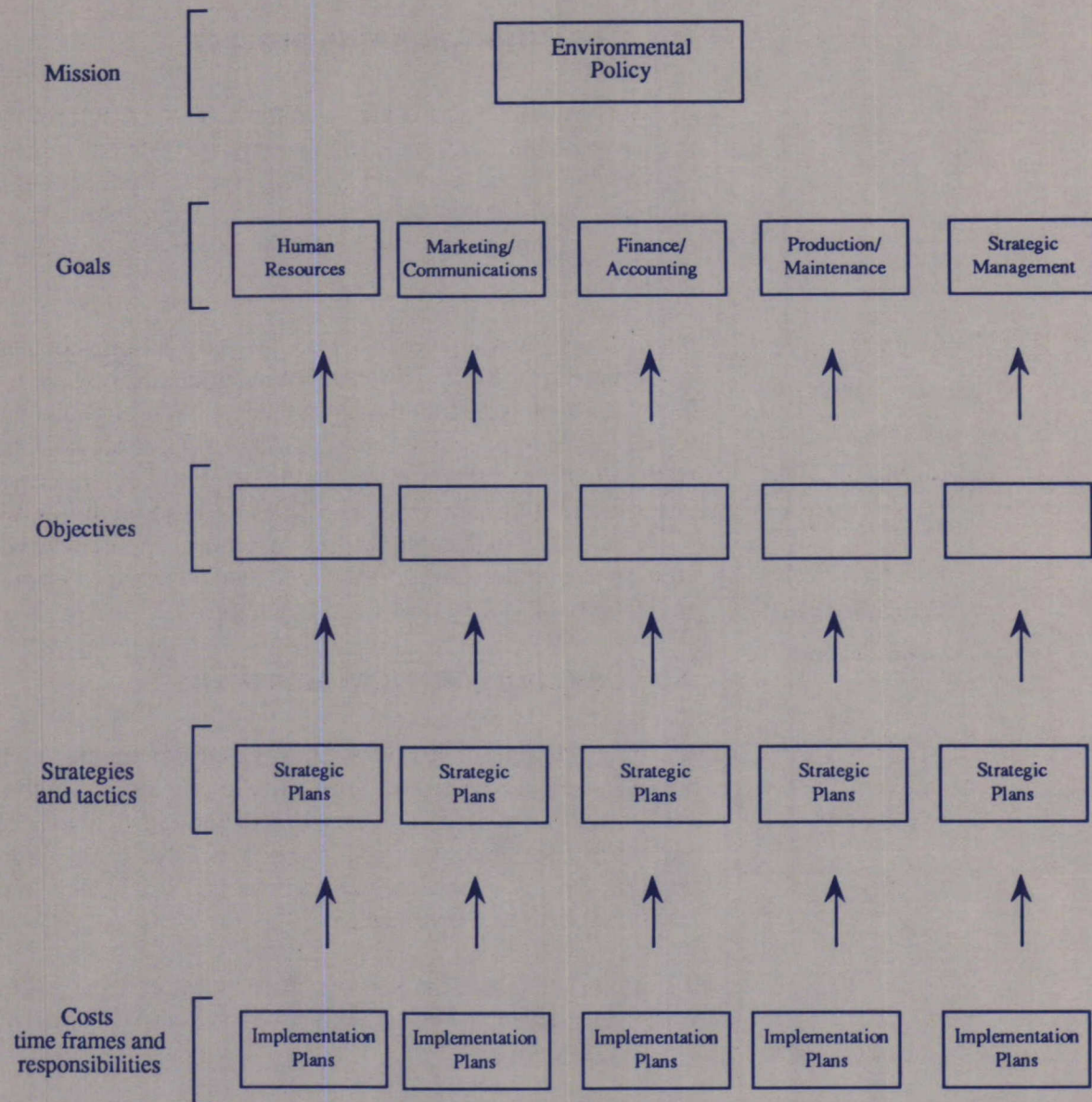
Audit reports should be reviewed by the environmental team because it has the vested responsibility to prepare and implement the action plan (recognizing that Board approval may be required). You may wish to include a member of the audit team on the review committee to provide clarification and additional insight where needed.

It is important at this stage to reach consensus on the issues that require action. These issues should be ranked in terms of urgency, as follows:

- High priority—requires immediate action.
- Medium priority—requires action within 3-12 months.
- Low priority—no immediate action required but may become a higher priority in the next one to two years.

Exhibit VI-1

Overview of the action planning process



This consensus development stage can be conducted in a roundtable session. It may be necessary to bring in outsiders, e.g., suppliers or qualified "experts", for the brain storming session and subsequent evaluation, particularly if it is an issue that has not been considered before.

Once you have agreed on the environmental issues requiring action, you are then ready to set goals. Some of the goals will be long-term (to be accomplished within three to five years) while others will be short-term (to be accomplished within one year or less). Goals represent the end points you want to reach. They are supported by measurable objectives that are challenging but achievable. An example of a goal and supporting objectives is as follows:

Goal: "To be the most environmentally-conscious company in our industry."

Objectives: "Reduce our rate of energy consumption 20% from current levels."

"Double the amount of waste cardboard sent for recycling by the end of the year."

"Exceed 90% staff awareness of our environmental programs."

C. Develop strategies and tactics

Strategies and tactics refer to the specific actions you must undertake to fulfill the goals and objectives. Strategies are generally broader and longer term than tactics. Some examples of strategies related to a firm's marketing mix are presented in Exhibit VI-2.

Exhibit VI-2

Integration of environmental factors into the marketing mix

Product

- Make or distribute products that minimize the consumption of raw materials, are reusable or recyclable, and minimize waste.
- Develop and promote products that are environmentally sound.
- Use environmentally sound packaging that minimizes energy consumption, pollution, and waste.

Price

- If environmentally benign products cost more, be sure to tell your distributors and customers the ecological differential behind these costs.
- Identify opportunities to generate revenues from the sale of recyclable materials, which may help to offset increased purchasing costs.
- Realize that corporate environmental initiatives can only be sustained by companies that offer high-quality products and services at a competitive price.

Promotion

- Widely communicate the environmental benefits of your products or services.
- Be factual, modest, and frank about your advertising claims.
- Work with your industry association to help broadly improve the credibility of business on environmental issues.

Distribution

- Establish distribution or “re-distribution” systems that support the recycling and reuse of used materials.
 - Favour transportation systems that minimize environmental impacts in terms of energy consumption and pollution.
-

ECO-LOGICAL IDEA...

Establish a corporate
"Green Team"
whereby admittance
is based on the successful
achievement of an employee-
sponsored green initiative.

D. Assign costs, time frames and responsibilities

The final step in the action plan is to assign time frames and costs for each tactic. A typical tactic may be to prepare a quarterly environmental newsletter or establish a cardboard recycling program.

Typically, non-compliance issues should be addressed first and be given adequate funds. The next priority is to conduct tasks that involve a significant number of your staff and are easy to implement.

Another consideration in scheduling action items is external communications. If your firm or industry is facing intense public scrutiny, it may be more important to work on highly visible programs rather than those that focus on building internal morale.

It is important to assign to individuals responsibility for each action item. The person chosen will be required to plan, implement and ensure success of the action item. It is important to identify an individual that is highly motivated and keen to accept the responsibilities. He or she should be given adequate resources, including time away from their regular duties to conduct the work.

The best approach is to select someone who has a vested interest in the project (e.g., where the action plan has a significant impact on the department or job).

Wherever possible, try to adopt a voluntary approach with staff, as opposed to making their cooperation mandatory. You will likely be surprised how willing employees are to work on environment-related tasks.

E. Financing and the Environmental Action Plan

When planning an investment or major item purchase, it is important to:

- Consider environmental impacts and associated environmental costs.
- Use investment costing methods that do not discriminate against long-term projects that only provide a return after a number of years.

When purchasing environmental protection equipment, it is important to:

- Favour those technologies that provide simultaneous productivity improvements.
- Favour preventative technologies as opposed to end of pipe technologies.

It is worthwhile to research and take advantage of government funding programs related to the environment. A list of these are provided in Appendix D.

VII Training And Motivating Your Staff

*"We have found that
the attitude of the
personnel on site,
at every level,
is the most important
factor affecting
compliance with
environmental
regulations."*

*~ John Butlin,
Managing Director
J.A. Butlin Ltd.
Natural Resource
and Environmental
Management Consultants*

Your employees represent both the greatest opportunity for success and the greatest threat to failure of the environmental program. If they are convinced about the program, the program will virtually run itself. However, if they do not support it, the program will fail no matter how well other aspects have been adopted.

A high level of staff involvement is imperative for the program to work. It is a basic management principle that people do not reject their own ideas. If they perceive the environmental program as "their" program, they will be its greatest champions. This is the key because, after all, it is the staff that will ultimately be responsible for implementing the environmental action plan described in the previous chapter.

A. Establish a training program

The training program should be established in a participatory manner using a cooperative management approach. In fact, improving staff awareness and knowledge of environmental issues and company activities should be more of a coaching process than a traditional training process. Training on environmental issues must coincide with societal attitudes about the environment. The training program can only be expanded at a pace that matches public awareness and attitudes toward the environment. Each new program must be introduced in a sensitive manner with strong consideration for the staff that will be affected.

It is often effective to develop an environmental training program in a number of stages, as follows:

- **Raise general environmental awareness** (provide information about local pollution incidents that may impact your staff, provide government pamphlets on individual action to protect the environment).

- **Raise company-level environmental awareness** (establish an environment section on your bulletin board and provide environmental information specific to your firm).
- **Address specific environmental issues** (invite an environmental expert to make a presentation on the different types of recycled papers and the use of vegetable based inks).
- **Provide practical guidance and support** (provide bins for recycling different materials and explain how to use them).

Depending on the size of your company, you may wish to hold office-wide training sessions or divide the sessions among staff at different levels or in different departments. It is important to identify who should attend and how relevant the information will be to them. For larger companies, possible groups include:

- ~ Senior management personnel
- ~ Middle management personnel
- ~ Production staff
- ~ Administration staff
- ~ Purchasing staff
- ~ New employees and trainees
- ~ Representatives of major supplier firms
- ~ Major customers.

The environmental training program should be organized by your environmental coordinator. These training sessions could be conducted by this individual or by the staff person who conducts training in other areas of your company. Your company can also draw on a variety of external personnel to discuss certain issues. These individuals include:

- Government officials that develop and enforce environmental legislation.
- Representatives of environmental groups that are working cooperatively with business.
- Scientists and inventors of new environmental technologies.
- Representatives of private firms that provide environmental services or products.

B. Prepare the agenda

While an effective environmental training program can cover a wide range of topics, the agenda typically contains the following elements:

- Overview of environmental issues.
- Goals and objectives of program.
- Benefits of the program.
- Staff roles and responsibilities.
- Progress to date.

C. Motivate your staff

While training provides knowledge, it does not necessarily engender motivation. A variety of additional strategies must be pursued to encourage employee involvement in the process. Some "do's" and "don'ts" of building employee motivation include the following:

- Do tell employees your environmental objectives, but wherever possible allow them to use their own creativity or innovation to determine HOW to meet those objectives.
- Do give praise in the presence of others (it is not only twice as effective, but also motivates the others to follow suit).
- Don't give an employee a "fait accompli" or proceed without his/her input (voluntary participation yields far better results than mandatory enrollment).
- Don't try to make too many environmental changes in too short a period of time: it will only create resistance.

In summary, it is important to create an organizational culture in your firm that encourages spontaneous initiative-taking by your staff.

ECO-LOGICAL IDEA...

Hold an office
"Environment Day"
and encourage each
individual to
come up with a new
green initiative.

D. Maintain awareness

A variety of techniques can be used to maintain awareness about environmental policies, programs and practices in your firm. Possible techniques include the following:

- Allocate space on certain notice boards to pass on environmental issues (e.g., posters above photocopy machines encouraging people to double-side their photocopies).
- Incorporate an "environment column" in the company newsletter.
- Establish a company environment library.
- Purchase recycled stationery and other environmental sound products that encourage staff to "think environment" every time they use them.
- Organize an "environmental raffle" with a bicycle as the main prize.

E. Celebrate successes

Take every opportunity to publicize environmental achievements through a variety of "celebration events" and to reward environmentally-positive behavior. Big awards for herculean efforts are a must but numerous awards for small acts of heroism are at least as important. Some guidelines for recognizing and rewarding "green" deeds are as follows:

- Stress the involvement of all staff concerned, not just the environmental coordinator or environmental team members.
- Provide incentives for environmental suggestions from staff members (e.g., offer a free dinner for two for the best environmental suggestion in a given month).

- Announce successful suggestions in the company newsletter at staff meetings, on bulletin boards, and at every other convenient opportunity.
- Offer a cash bonus for any employee environmental suggestion that improves environmental quality while reducing overall costs.
- Give most of your rewards to teams of people, not individuals.

For each incentive, ensure that the rewards are clearly defined and equally applied throughout your company. If you want to build a team spirit, make sure that the gang at the distribution centre are recognized with equal enthusiasm as the managers in the office.

VIII Communicating Your Endeavours

*"Information is not
knowledge.
You can mass produce
raw data and incredible
quantities of facts
and figures.
You cannot mass produce
knowledge, which is
created by individual
minds, drawing on
individual experience."*

~ Theodore Roszak

A. Develop an external communications program

The purpose of developing a communications program is to establish an ongoing and positive dialogue between your company and the public. Not only will this improve your corporate image, it will also promote environmental protection in general.

One very effective and inexpensive method of communicating your environmental endeavours is to contact the media. The media are generally very receptive to reporting corporate environmental success stories so long as they are substantive and have human interest appeal. One newspaper or magazine article provides far greater public relations value than ten paid advertisements.

Tailor your communications to reach a variety of target groups, including:

- ~ Your staff.
- ~ Your customers.
- ~ Your suppliers.
- ~ Environmental groups.
- ~ Government representatives.
- ~ Industry associations.
- ~ The general public.
- ~ School children (they have a major impact on their parents).

B. Beware of potential pitfalls

While developing a communications program has many positive benefits, it can have some potential drawbacks. A number of companies have learned some hard lessons. Below, we outline some precautions you can take to avoid negative backlash when communicating your environmental endeavours. While not every suggestion is applicable to every situation, they offer a checklist of strategies for all environmental communications.

1. Be sure of your facts

Your environmental activities will be carefully scrutinized by your customers and the general public. If you have instituted a new environmental program, make sure that it is fully operational before making claims about it. If your customers or the public discover that one of your claims is untrue, they will not believe other claims that you make.

2. Be modest about your efforts

It is very difficult to say that your operations are completely environmentally benign. The public largely understands this, however, and will not be critical of you so long as you remain modest about your environmental endeavours. The media, environmental groups and the public have become too discriminating on environmental issues to accept what might be considered a typical overstatement in an advertising claim.

3. Be open and honest

If any individual or organization questions you about your environmental initiatives, be frank about what you know and admit what you don't know. If you are open and honest, you will gain the public's trust and obtain strong corporate image value.

If you have a particular environmental problem, acknowledge it. Public attitudes about the environment are driven by deeply felt emotions and sentiments. Denying a problem will likely create a storm of protest from which it will be difficult to recover.

4. Be willing to compromise

When responding to public pressure to improve your environmental performance, try not to take a rigid stance. The public will be unlikely to accept that certain aspects of your environmental action plan are not debatable, especially if you have no reason for that entrenched position. Adopting a take-it-or-leave-it approach will only encourage the public to reject your initiatives.

5. Be aware of public perceptions

Before communicating your endeavours, it is beneficial to understand the perspectives of the various interest groups. In particular, it is important to know what the government expects as well as to understand the positions of environmentalists, the media, and the public. Researching these perceptions allows you to prepare your position carefully and not be forced to act defensively.

6. Take an active approach

When the discussion heats up, don't shy away from the debate. It is important for you to state your position publicly on a particular environmental issue. By taking a passive approach your message will not be heard and you may open yourself to attack and defensiveness.

7. Focus on alternatives

One positive way to overcome a stalemate of positions is to provide alternatives or re-focus the issue in a more positive direction. Offering a way out as opposed to dwelling on the negative may be all that is needed to achieve success.

8. Talk in specific terms

Wherever possible, use specific examples and activities when describing your environmental endeavours. Specific statements are easier to understand and more plausible than general statements. The use of "Motherhood" statements can lead the public to believe that your company prefers words to action.

ECO-LOGICAL IDEA...

It is better to put your effort
into positive actions than
positive reports on
mediocre actions.

9. Report on past events

It is better to report on what you have done rather than what you are planning to do. This ensures that the image you provide of your firm matches the reality. Describing noble future intentions may be perceived by the public as a smoke-screen to cover up a depressing current situation.

C. Monitor your success

Communication is not a one way process. To ensure that your communications program is producing the desired results, it is important to conduct ongoing market research of your customers, environmental groups, and the public. Some popular methods of obtaining feedback are presented below.

1. Distribute mail-out questionnaires

You can send questionnaires to your customers by mail. You will drastically increase your response rate if you make the questionnaire as brief as possible, include a self-addressed postage paid envelope, and include some type of incentive such as being entered into a free draw. Contacting your customers in advance and obtaining their commitment to complete the survey is another way to greatly improve response rate.

2. Conduct telephone surveys

To obtain more detailed information than a mail survey, you can conduct telephone interviews with your customers or the public. Telephone interviews allow you to probe for more information on topics of particular concern. While more expensive to conduct, telephone interviews generally produce a much higher response rate than questionnaires.

3. Conduct personal interviews

You can conduct personal interviews at the point of purchase of your products. The advantage of personal interviews is that they allow you to obtain information from non-customers.

4. Conduct focus groups and roundtable discussions

You can invite representatives from various interest groups to provide feedback on your environmental initiatives. This survey method is expensive but provides very "rich" information. People tend to generate many more ideas and suggestions in a group situation than they do individually. Focus groups can often turn detractors into active supporters if they are made to feel ownership in your endeavours.

5. Provide a telephone "hotline" service

You can provide a temporary or permanent telephone service in which anyone can phone and provide their opinion on your environmental initiatives. This can be particularly worthwhile just after the launch of your communications program.

6. Provide suggestion boxes

You can provide suggestion boxes at strategic locations at your point-of-purchase. While suggestion boxes are instituted in many organizations, they often fail to be used because people don't believe that their suggestions will be acted upon. Conversely, organizations that demonstrate prompt follow-up to the suggestions provided, find this survey method to be very productive.

Depending on the size and nature of your business, you may favour some survey methods over others. The important point is to continually monitor how your customers and other interest groups perceive you. Only in this manner will your communications have meaning and impact.

D. Take follow-up action

Once you have compiled the survey information, it is important to analyze the results and adjust your communications program to reflect the awareness and attitudes of the target audience.

IX Repeating The Cycle

"The world is moving so fast these days that the person who says it can't be done is generally interrupted by someone doing it."

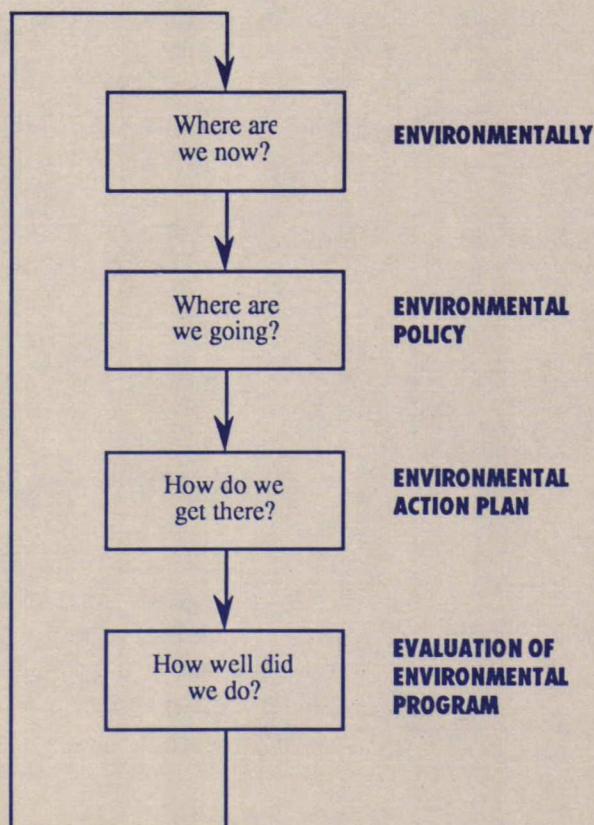
*~ Elbert Hubbard,
American author*

A. Evaluate your past success

Upon completing the six steps described in the previous chapters, it is important to evaluate your success. This stage in the environmental management process is illustrated as the final box in Exhibit IX-1. In addition to evaluating your improved environmental performance, you should also evaluate the impact that the environmental management process has had on your economic performance. You may be surprised how effective the process is as a "competitive" tool.

Exhibit IX-1

Abbreviated diagram of the environmental management process



Evaluating your previous success allows you to develop a positive track record that can be communicated to interested parties. Further, success itself provides encouragement that further accomplishments are possible. Such optimism is often felt most by those immediately affected by positive results.

Once you have completed the evaluation, you will have established a new threshold from which to begin the process again.

In the remaining sections of this chapter, we present some additional recommendations that are important to an effective corporate environmental program but which cut across multiple elements of the environmental management process.

B. Take a long-term view

It is important to adopt a long term approach in developing your environmental action plan. While some environmental initiatives provide immediate returns, many others take much longer to produce tangible rewards. A preoccupation with short term quarterly financial results is counter-productive to an effective environmental strategy.

Not only will this approach provide long term benefits for your company, it will also provide long term benefits for society in general. Apart from the environmental benefits, a long term environmental strategy will produce medical, social, cultural and economic benefits as well.

Sustainable development implies that future generations must not be adversely affected by the activities of present generations.

C. Conduct ongoing market research

Environmental issues are continually evolving and changing. To keep abreast of these events, it is important to conduct ongoing research. In the previous chapter we talked about conducting research on the attitudes and awareness of your customers and other interest groups. Other ways to keep track of environmental "current affairs" include the following:

- Subscribe to environmental business publications.
- Attend environmental trade shows and conferences.
- Join environment-related associations.
- Read and maintain a library of environment-related reports.

After you have identified those issues most relevant to your organization, conduct specialized market research to find out how you can adapt your environmental action plan accordingly. A list of government and non-profit organizations concerned with business and the environment is presented in Appendix E. A list of books, periodicals and directories dealing with business and the environment is presented in Appendix F.

D. Treat environmental performance as a competitive tool

In today's global marketplace, the survivors will be those who can deliver competitive products and services in an environmentally sound manner. Those companies will be the ones that develop an environmental management program that extends through every department of their organization and to the external community.

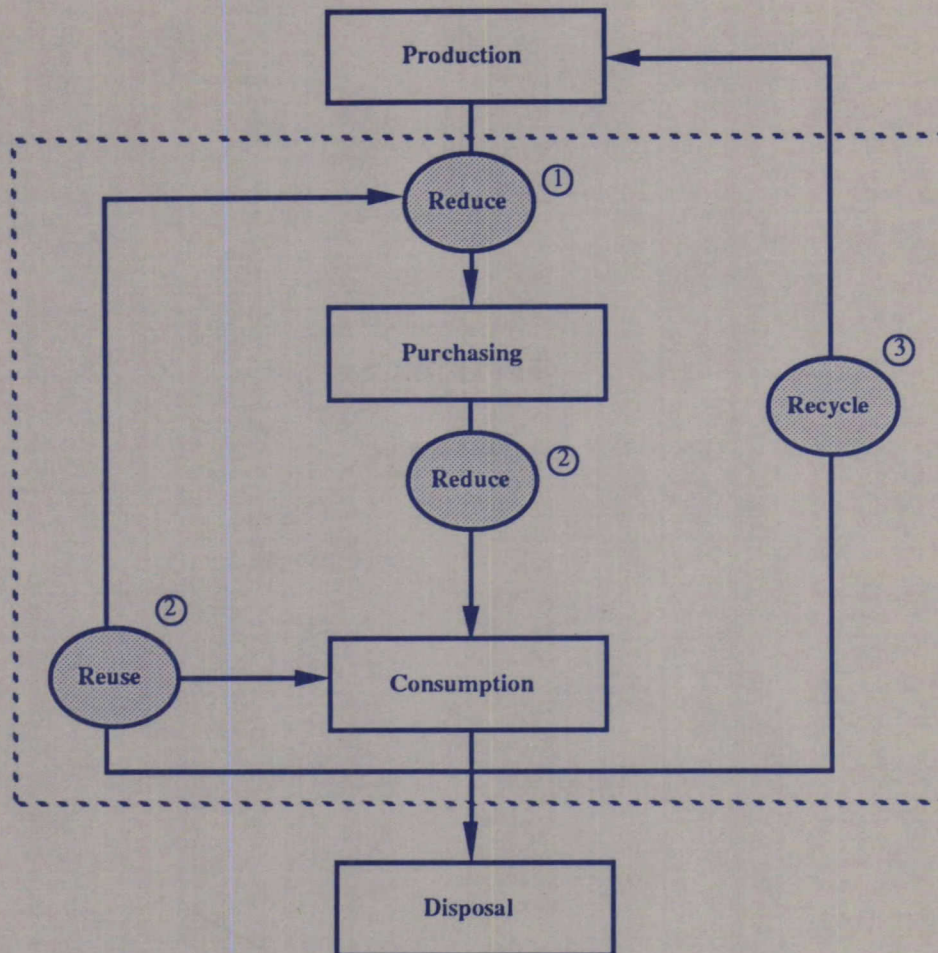
While short-term transition costs may arise when initiating the environmental management process, in the long term it will dramatically help to improve a firm's competitive success. More and more companies are recognizing the positive linkages between corporate performance and environmental performance. We encourage you to prepare now to reap the environmental and economic benefits necessary for success in this new business era.

APPENDIX A



Waste Flow Diagram

APPENDIX A: WASTE FLOW DIAGRAM



Note: The dotted line denotes the boundary of activity controlled by your company.

Waste minimization means:

1. Reducing your total purchases and your internal consumption patterns.
2. Reusing resources either internally or externally (e.g., sell or donate to other organizations who can reuse the resource).
3. Recycling resources at the end of their useful life.

APPENDIX B



Environmental Audit Checklist

Appendix B Environmental Audit Checklist

| | Yes | No |
|---|--------------------------|--------------------------|
| Compliance Audit | | |
| Have you made a list of all permits held and the limits contained within the permits. | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you identified the source or process to be evaluated and the point in the process where measurements should be taken (i.e., at a point where effluents are well mixed). | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you determined the type of equipment and procedures to be utilized when measuring and the level of accuracy required. | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you ensured that the measurements to be taken are represented in both meaningful and comparable terms (e.g., parts per million or PPM) that are recognized by the intended user. | <input type="checkbox"/> | <input type="checkbox"/> |
| Are results reported in terms of quantity per unit of production output to facilitate comparison? | <input type="checkbox"/> | <input type="checkbox"/> |
| Are samples analyzed as soon as possible to minimize ongoing chemical reactions that may bias the results? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do water-borne emission concentrations comply with relevant regulations? | <input type="checkbox"/> | <input type="checkbox"/> |
| ■ If not, do you know why? | <input type="checkbox"/> | <input type="checkbox"/> |
| ■ If not, have you implemented measures to correct the situation? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do air-borne emission concentrations comply with relevant regulations? | <input type="checkbox"/> | <input type="checkbox"/> |
| ■ If not, do you know why? | <input type="checkbox"/> | <input type="checkbox"/> |
| ■ If not, have you implemented measures to correct the situation? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you documented the equipment and procedures so that subsequent audit teams can repeat the process in the same manner? (This is the only way to permit comparison of like data.) | <input type="checkbox"/> | <input type="checkbox"/> |

Appendix B Environmental Audit Checklist (cont'd)

| | Yes | No |
|--|--------------------------|--------------------------|
| Management Audit | | |
| Have you reviewed shipping manifests to track quantity and location of off-site disposal? | <input type="checkbox"/> | <input type="checkbox"/> |
| For highly toxic or sensitive processes have you conducted a material balance (i.e., track each unit of raw material entering a production system and accounted for it in terms of outputs)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you identified/projected future government requirements (e.g., regulatory changes) that may affect your operations? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you assessed alternate waste reduction methods? | <input type="checkbox"/> | <input type="checkbox"/> |
| ■ If yes, have you considered: | | |
| a. Implementation costs | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Level of improvement over current systems | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Potential risks | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Payback period | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you provide regular training for employees on risk identification and mitigation? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you implement "clean technologies" when options exist? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you avoid mixing effluents where possible to facilitate recovery and recycling of useful substances? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you adjusted your marketing strategy so that it is consistent with your environmental policies? | <input type="checkbox"/> | <input type="checkbox"/> |

Appendix B Environmental Audit Checklist (cont'd)

| | Yes | No |
|--|--------------------------|--------------------------|
| Procurement Audit | | |
| Have you assessed your purchase items to see if are any items are unnecessary and, therefore, don't need to be purchased? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have your reviewed your purchases with a view to choosing the "environmentally superior" option, based on a cradle to grave analysis? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you established environmental purchasing guidelines which all suppliers must comply with? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you try to purchase products with recycled content whenever possible? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you order supplies in bulk whenever possible to reduce packaging? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you know what the proportion of post-consumer waste content in your recycled paper purchases? | | |
| Do you research ways to reduce your purchase of disposable items (e.g., buy rechargeable batteries and refillable pens)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you discuss excess packaging with your suppliers in an effort to reduce packaging waste? | <input type="checkbox"/> | <input type="checkbox"/> |
| When making capital investments in machinery and equipment do you consider the environmental implications of the materials required to run and service the equipment and how it compares to alternative pieces of equipment? | <input type="checkbox"/> | <input type="checkbox"/> |

Appendix B Environmental Audit Checklist (cont'd)

| | Yes | No |
|---|--------------------------|--------------------------|
| Real Estate Audit | | |
| Have you conducted a title search on the property extending back 50 years? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you reviewed maps and photographs of the site? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you reviewed geological and hydrological records for the site? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you looked for and reviewed any reports that may exist on the site? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you assessed the properties within a 1 km radius (or greater depending on topography) for sources of pollution that may travel to your site? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you conducted a site visit and sampled for the presence and concentration of soil and groundwater contaminants? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you checked the structures for the presence of hazardous substances? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you checked with local authorities to identify property set-backs, zoning, building constraints, and any forthcoming changes? | <input type="checkbox"/> | <input type="checkbox"/> |

Appendix B Environmental Audit Checklist (cont'd)

| | Yes | No |
|---|--------------------------|--------------------------|
| Waste Minimization Audit | | |
| Do you have recycling boxes in every office? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you have a can and bottle recycling system in place for your staff and visitors? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you compost any organic materials that may otherwise be thrown out (e.g., get staff volunteers to take home food waste for their own composters on a daily basis)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you replaced your styrofoam cups and plastic cutlery in the lunch or coffee rooms with ceramic cups and stainless steel? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you purchase milk or cream for coffee in cartons or jugs rather than the small single-serving disposable containers? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you write on both sides of your paper and instruct all staff to do the same? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you photocopy documents on both sides of the paper and have a sign posted to instruct staff to do the same? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you used the reduction feature on your photocopier where possible to avoid using larger sheets of paper or more pages? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you leave a large space for messages on your fax cover sheets so that you can often avoid sending a second page? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you print your fax cover sheets on the clean side of used paper? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you reviewed your forms to eliminate those that are unnecessary? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you contacted the nearest waste exchange to determine if potential buyers exist for your discarded materials? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you recycle packaging materials (e.g., cardboard and wood pallets). | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you reuse packaging materials wherever possible to extend their useful life? | <input type="checkbox"/> | <input type="checkbox"/> |
| Are you recycling all CFCs from vehicles and building refrigeration/air conditioning systems? | <input type="checkbox"/> | <input type="checkbox"/> |

Appendix B Environmental Audit Checklist (cont'd)

| | Yes | No |
|--|--------------------------|--------------------------|
| Water Conservation Audit | | |
| Have you assessed the potential for reuse of waste water? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you established a water conservation program to reduce wastewater generation? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you considered the possibility of closed-loop systems for planned construction of new facilities or upgrades? | <input type="checkbox"/> | <input type="checkbox"/> |
| a. It is technically feasible? | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Have you conducted a cost-benefit analysis incorporating environmental costs? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you installed water conserving plumbing fixtures, such as flow reducing faucet nozzles, in your buildings? | <input type="checkbox"/> | <input type="checkbox"/> |
| Does your safety program include guidelines to minimize the drain disposal of chemicals? | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you purchase water-efficient flushing systems for new facilities and place jars of water in the holding tank of other toilets? | <input type="checkbox"/> | <input type="checkbox"/> |
| If you are large industrial concern have you installed additional water meters at various stations so that you can track and control water consumption at a "micro" level? | <input type="checkbox"/> | <input type="checkbox"/> |

Appendix B Environmental Audit Checklist (cont'd)

Yes No

Energy Conservation Audit

A. Internal Energy Sources

Do you replace used light bulbs with more energy efficient models?

☐ ☐

Do you use timers and dimmers to reduce the on-time or intensity of lights and other electrical items?

☐ ☐

Have you evaluated your light levels against recommended standards (see your electrical utility company for details) to ensure that lighting is both sufficient and not excessive?

☐ ☐

Do you turn off desk lights, computers and other electrical items when you leave your office?

☐ ☐

Do you purchase energy efficient appliances (e.g., fridges, microwaves, etc.)?

☐ ☐

Do you keep vehicles properly tuned up and serviced so that they are more fuel efficient?

☐ ☐

Have you conducted a cost-benefit analysis of switching company equipment and vehicles to cleaner fuels such as natural gas and methanol?

☐ ☐

Have you inspected auto emission control devices in fleet vehicles in the past twelve months?

☐ ☐

Have you checked for government incentives (e.g., through the B.C. Hydro Power Smart program) that may assist your company in reducing energy consumption?

☐ ☐

Do you schedule annual maintenance for your heating ventilation and air-conditioning (HVAC) systems and clean or replace filters on a regular (e.g., quarterly) basis?

☐ ☐

Have you upgraded HVAC systems, elevators, etc. with high efficiency motors?

☐ ☐

Have you installed heat recovery systems to warm and cool incoming air in the winter and summer, respectively, in your buildings?

☐ ☐

continued...

Appendix B Environmental Audit Checklist (cont'd)

Yes

No

Energy Conservation Audit Continued...

B. External Energy Sources

Do you purchase only recycled oil for all vehicles and other machinery?

☐☐

Do you provide bus passes for your employees?

☐☐

Do you promote car pooling amongst your staff?

☐☐

Do you give out free parking passes as perks to staff? (If yes, you should stop this practice unless they need the car on a daily basis to see customers.)

☐☐

Do you provide bicycle racks and showers to encourage cycling to work?

☐☐

When travelling do you try to share taxis whenever possible?

☐☐

When arriving at an airport do you take the airport bus instead of a taxi?

☐☐

When possible do you arrange for a hotel that is near meeting places so that you can walk back and forth?

☐☐

APPENDIX C



Selected Firms That Provide
Environmental Audit Services
in British Columbia

Appendix C

Selected Firms That Provide Environmental Audit Services In British Columbia

Beak Associates Consulting Ltd.

#100 - 6846 King George Highway Surrey, B.C. V3W 4Z9

Phone: 597-0422 Fax: 591-1856

Eric McGreer Senior Environmental Scientist

BH Levelton & Associates Ltd.

12791 Clarke Place Richmond, B.C. V6V 2H9

Phone: 278-1411 Fax: 278-1042

Wayne Edwards Environmental Manager

Dames & Moore

#505 - 700 West Pender Street Vancouver, B.C. V6C 1G8

Phone: 683-5585 Fax: 683-7758

Eric Terhorst Manager, Geo. Sciences

Golder Associates Ltd.

224 West 8th Avenue Vancouver, B.C. V5Y 1N5

Phone: 879-9266 Fax: 879-5014

Brian Conlin Office Manager

Norecol Environmental Consultants Ltd.

#700 - 1090 West Pender Street Vancouver, B.C. V6E 2N7

Phone: 682-2291 Fax: 682-8323

Will Gaherty Manager, Technical Services

**This list represents only a sample of firms that provide environmental
services in British Columbia. It is not intended to endorse any firm or firms.**

APPENDIX D



Environment-Related Government Funding Programs
Available To Companies Within British Columbia

Appendix D Environment-Related Government Funding Programs Available To Companies Within British Columbia

| Name of Program | Purpose | Type of Assistance | Program Administrator |
|--|---|---|--|
| Agriculture Land Development Agreement (ALDA) | To promote land development for agricultural purposes. | Provides low interest loans for projects entailing environmentally-sound drainage, irrigation, land clearing, and animal waste disposal practices. | Director, Financial Development Programs Branch Ministry of Agriculture and Fisheries Victoria (604) 356-1822 |
| Mine Development Program | To support industrial infrastructure for the development of remote and potentially valuable ore bodies. | Grants of up to 50 per cent of the cost of environmental studies and engineering designs. | Ministry of Energy, Mines and Petroleum Resources Victoria (604) 387-5178 |
| Energy Efficiency and Technology Program | To encourage the construction of independent power projects, which improve current environmental conditions, such as woodwaste thermal generation stations that replace waste wood burners of landfills. | At the request of the Province, B.C. Hydro will allow for a price premium of up to 15 per cent when evaluating environmentally beneficial proposals to supply privately generated electricity for the B.C. Hydro domestic system. | Ministry of Energy, Mines and Petroleum Resources Victoria (604) 356-2154 |
| Science and Technology Development Fund—Assistance Grants for Applied Research (STDF-AGAR) Program Industry-based Research and Development Component | To promote collaboration between industry and the province's research community for industry-based research and development of products and processes, technology transfer and human resources. | Approved research projects will receive up to 50 per cent matching grants for private sector activities. | Science Council of B.C. Burnaby (604) 438-2752 |
| Science and Technology Development Fund—Assistance Grants for Applied Research (STDF-AGAR) Program Core Funding Component | To consider applied research and technology development projects in various economic sectors, including: forestry and forest products, mining and minerals and metals, manufacturing and environment, fishing and aquaculture and food, transportation and tourism. Eligible technologies include electronics, computing and software, biotechnology, advanced materials, artificial intelligence and robotics. | Grants of up to 100 per cent of total project costs available for approved research. | Science Council of B.C. Burnaby (604) 438-2752 |

Appendix D (Cont'd) Environment-Related Government Funding Programs Available To Companies Within British Columbia

| Name of Program | Purpose | Type of Assistance | Program Administrator |
|--|---|---|--|
| Silviculture Program Basic Silviculture | To restock forest areas denuded by timber harvests, fire and pests. Activities include surveys, site preparation, planting, brushing and spacing. | Funds are provided under the SBFEP, the Ministry Silviculture Program and by major licensees for the basic silviculture activities on Crown land. Contracts are tendered. | Ministry of Forests Victoria (604) 387-8900 |
| Silviculture Program Seed and Nursery Operations | To provide all the seeds and seedlings required for basic and intensive silviculture. Most seedlings planted in the province are grown in private sector nurseries. Private and government funded seed orchard facilities are providing genetically improved seedlings. | Increasingly, seeds and seedling requirements are being supplied under contract by the private sector. Contracts are tendered. | Ministry of Forests Victoria (604) 387-8954 |
| Municipal Solid Waste Management Program Phase I—Solid Waste Management Strategy | To provide assistance to municipalities to reduce municipal waste by 50 per cent by the year 2000. | Funding is available to develop a comprehensive public education and information program; to identify environmental markets for recycled materials and cost share the research for innovative environmental technologies in reduction, re-use and recycling of waste; to participate in a pilot paper recycling program and in a federal/provincial study on product packaging. | Ministry of Environment Municipal Solid and Biomedical Waste Branch Victoria (604) 387-9974 |
| Development and Demonstration of Resource and Energy Conservation Technology (DRECT) | To provide assistance to business, provincial and municipal governments in the design and development of new technologies that can reduce pollution and recover energy from municipal and industrial wastes. | Funding is available for prototype development. Expenses covered include up to 50% of equipment, buildings, installation, engineering and consulting services. | Industrial Incentives Division Technology Development Branch Environment Canada Ottawa, Ontario K1A 0H3 (613) 991-1958 |

Appendix D (Cont'd) Environment-Related Government Funding Programs Available To Companies Within British Columbia

| Name of Program | Purpose | Type of Assistance | Program Administrator |
|---|--|---|---|
| Advanced Manufacturing Technology Application Program | To assess the commercial and technical feasibility of a comprehensive upgrading of manufacturing operations through the application of advanced manufacturing technology. | Funding is available for qualified firms to engage outside expertise to conduct commercial and technical feasibility assessments. | Industry, Science and Technology Canada, British Columbia Vancouver (604) 666-0266 |
| Canada Awards for Business Excellence | To honour outstanding achievers in Canadian business. The award categories include: invention, innovation, industrial design, labour/management cooperation, entrepreneurship, marketing, productivity, small business, environment and quality. | Winners may use the CAFE logo on their products and publications. The awards are open to businesses of all sizes and in all fields of economic activity located in Canada. | Industry, Science and Technology Canada, British Columbia Vancouver (604) 666-0266 |
| Sector Competitiveness Initiatives | To improve the international competitiveness of specific Canadian industry sectors; especially in terms of economic opportunities and benefits, and the application of technologies and innovations. | Funding is available on a joint industry/government basis. To date, sector campaigns have been improved in the areas of automotive components, manufactured wood products, environmental industries, medical devices, advanced manufacturing technology, fashion industry and national forest products. | Industry, Science and Technology Canada, British Columbia Vancouver (604) 666-0266 |
| Strategic Technologies Program | To support research and development and technology application alliances in information technology, biotechnology and advanced industrial materials. | Financial assistance is available through industry-lead government alliances. These alliances can also involve foreign firms, universities or research institutes that wish to pool resources on pre-competitive research and development, and on pre-commercial technology application projects. | Industry, Science and Technology Canada, British Columbia Vancouver (604) 666-0266 |

APPENDIX E



Non-Profit Organizations Concerned With
Business And The Environment
In British Columbia

Appendix E Non-Profit Organizations Concerned With Business And The Environment in British Columbia

| Organization/Address | Contact Person | Phone/Fax | Description |
|---|--|---|---|
| A. Municipal Governments | | | |
| Greater Vancouver Regional District (GVRD) 4330 Kingsway Burnaby, B.C. V5H 4G8 | Toivo Allas, Director of Recycling Martin Morrison, Marketing Coordinator Ken Caswell, ICI Coordinator | Phone: 436-6800 Fax: 436-6811 | Provides information on recycling activities, marketing of recyclable materials and educational and promotional materials with a focus on the GVRD. |
| Capital Regional District (CRD) P.O. Box 1000 Victoria, B.C. V8W 2S6 | Roz Mellander, Recycling Coordinator | Phone: 388-4421 Fax: 388-5241 | Provides information on recycling programs with specific information relevant to the CRD. |
| B. Provincial Governments | | | |
| Ministry of Environment Public Affairs and Communications Branch 810 Blanshard Street Victoria, B.C. V8V 1X5 | Mark Stefanson, Director | Phone: 387-9422 Fax: 387-5703 | Provides information on all MOE programs including publications, regulatory requirements, financial assistance programs, and general inquiries. |
| Ministry of Environment Recycling Hotline | | | |
| Ministry of Regional and Economic Development Business Development and Investment Branch 712 Yates Street Victoria, B.C. V8V 1X5 | Gary Beatty, Director | Phone: 732-9253 or 1-800-667-4321 Phone: 387-0277 Fax: 356-8035 | Provides information from a database on recycling activities, recyclers in B.C., and how to dispose of materials. Provides information on MRED programs including business development support services. |
| Science Council of British Columbia #100 - 3700 Gilmore Way Burnaby, B.C. V5G 4M1 | SPARK Environment Industry Champion | Phone: 438-2752 Fax: 438-6564 | Provides assistance on infrastructural needs that facilitate business development. |
| B.C. Trade Development Corp. #730 - 999 Canada Place Vancouver, B.C. | Bryan Hughes, Trade Development Mgr. | Phone: 844-1961 Fax: 844-1925 | Provides assistance in developing environmental technologies and developing export markets for same. |

Appendix E (Cont'd)**Non-Profit Organizations Concerned With Business And The Environment in British Columbia**

| Organization/Address | Contact Person | Phone/Fax | Description |
|---|--|----------------------------------|--|
| C. Federal Government | | | |
| Industry Science & Technology Canada P.O. Box 11610 #900 650 W. Georgia Street Vancouver, B.C. V6B 5H8 | John Beveridge, Policy Analyst and Information Technology Advisor | Phone: 666-1416 Fax: 666-8330 | Provides information and support for technical innovation that supports business development and improve private sector competitiveness. |
| Western Economic Diversification Office P.O. Box 49276 Bentall Tower Four #1200 - 1055 Dunsmuir Street Vancouver, B.C. V7X 1L3 | Leslie Ramsay, Develop. & Assess. Officer | Phone: 666-1660 Fax: 666-2353 | Provides a source of financing for technical innovation that has a strong probability of commercial success. |
| Environment Canada Communications Directorate 224 W. Esplanade North Vancouver, B.C. V7N 3H7 | Sheila Ritchie, Director of Communications | Phone: 666-5900 Fax: 666-4810 | Provides information on all Environment Canada programs plus publications, audio-visual materials and general enquiries. |
| D. Industry Associations | | | |
| Vancouver Board of Trade #400 - 999 Canada Place Vancouver, B.C. V6C 3C1 | John Hansen, Chief Economist | Phone: 681-2111 Fax: 681-0437 | Provides publications and a forum for discussion on policy and operational concerns as they relate to business in Vancouver. |
| Business Council of B.C. #810 - 1050 W. Pender Vancouver, B.C. V6E 3S7 | Don Etchison, V.P. Corporate Relations | Phone: 684-3384 Fax: 684-7957 | Provides a forum for discussion on policy matters and assistance in identifying contacts for specific issues relevant to business in B.C. |
| Canadian Environment Industry Association - B.C. Chapter 4411 West 2nd Avenue Vancouver, B.C. V6R 1K6 | Peter Jones, Executive Director | Phone: 261-7000 Fax: 261-7000 | Promotes the interests of environmental firms in British Columbia. |

Appendix E (Cont'd)**Non-Profit Organizations Concerned With Business And The Environment in British Columbia**

| Organization/Address | Contact Person | Phone/Fax | Description |
|--|---|--|--|
| E. Other non-profit organizations | | | |
| Provincial Round Table on the Environment and the Economy #229 - 560 Johnson Street Victoria, B.C. V8W 3C6 | Rick Wilson, Director of Sustainable Development | Phone: 387-5422 Fax: 356-9276 | Provides advice to provincial government on how to integrate environmental, economic and social considerations so as to enhance opportunities for the future. |
| National Round Table on the Environment and the Economy #1 Nicholas Street, Suite 250 Ottawa, Ontario K1N 7B7 | Dr. George Connell, Chairman | Phone: (613) 992-7189 Fax: (613) 992-7385 | Provides advice to federal government on the integration of environmental, economic and social considerations so as to enhance opportunities for the future. |
| British Columbia Waste Exchange Recycling Council of British Columbia 2150 Maple Street Vancouver, B.C. V6J 3T3 | Tim Reeve, Waste Exchange Coordinator | Phone: 731-7222 Fax: 731-2615 | Publishes a quarterly bulletin and a resource director of recycling services and agencies. |

APPENDIX F



Suggested Reading List
On Business And The Environment

Appendix F Suggested Reading List On Business And The Environment

| Name | Contact Information | Description |
|------------------------------|--|---|
| A. Periodicals | | |
| EcoSource | Box 1270 Guelph, Ontario N1H 6N6 Phone: (519) 763-8888 Fax: (519) 763-6202 | Provides an environmental intelligence report edited for professionals. A concise overview of relevant environmental news and opinions is presented. |
| Enviroline | 1411 6A Street Northwest Calgary, Alberta T2M 3G8 Phone: (403) 289-0390 Fax: (403) 282-6632 | Provides a compendium of environmental news plus reviews of new policies directed primarily to forestry and energy sectors. |
| Environmental Eye | Businesstek Publishing Inc. P.O. Box 1125, Station H Nepean, Ontario K2H 7T8 Phone: (613) 825-5939 | Reports trends that threaten to change the status quo between business and the environment. News and views on corporate greening are also provided. |
| Materials & Energy Advantage | Evert Communications Ltd. P.O. Box 3158, 982 Wellington St. Ottawa, Ontario | Provides updates on innovations by government and industry on physical plant operation, production, handling, packaging, transport and retailing in all sectors of the economy. |
| Eco-Log Week | Corpus Information Services 1450 Don Mills Road Don Mills, Ontario M3B 2X7 Phone: (416) 442-2122 Fax: (416) 442-2200 | Presents summaries and reviews on pollution control technology, industrial waste management issues, regulatory programs, plus funding and contract information. |
| Environmental Digest | Sydenham Publishing 459 - 13th Street, West Owen Sound, Ontario N4K 3W8 Phone: (519) 371-6289 | Provides concise summaries of environmental news, trends and developments in twelve subject areas including recycling, energy conservation, environmental law, new technologies, and so on. |

Appendix F (Cont'd)**Suggested Reading List On Business And The Environment**

| Name | Contact Information | Description |
|--------------------------------|--|---|
| A. Periodicals cont'd. | | |
| Sustainable Development | Sustainable Development Canadian Wildlife Service Environment Canada Ottawa, Ontario K1A 0H3 Phone: (819) 953-1448 | Provides a discussion of a broad range of environmental issues that affect Canada and Canadians. |
| Environmental Business Journal | EnviroQuest Inc. P.O. Box 371769 San Diego, California 92137-1769 Phone: (619) 295-7685 | Provides strategic business information on the North American environment industry. Focuses on environmental business trends and opportunities as well as routine reports on environmental firm stock market performance. |
| Ecodecision | Environment and Policy Society (The Royal Society of Canada) 276, rue Saint-Jacques Ouest bur. 924 Montreal, Quebec H2Y 1N3 Phone: (514) 284-3043 Fax: (514) 284-3045 | A bilingual journal that provides information on current environmental issues that can be used to make informed policy decisions in support of sustainable development. |
| Ecological Economics | Elsevier Science Publishers Journal Information Centre 655 Avenue of the Americas New York, N.Y. U.S.A. 10010 | Provides information on the integration of ecology and economics. Includes an international perspective on many issues including valuation of natural resources, renewable resource management, methods of implementing efficient environmental policies, etc. |

Appendix F (Cont'd)**Suggested Reading List On Business And The Environment**

| Name | Contact Information | Description |
|--|--|--|
| B. Books and Publications | | |
| Our Common Future | World Commission on Environment and Development (Brundtland Commission) Oxford University Press 1987 | Presents a global overview of the state of the natural environment and what needs to be done to correct the situation. |
| The Green Capitalists | Elkington, John and T. Burke Victor Gollancz Ltd. London, England 1989 | Provides a pro-active discussion on what companies can do to improve their environmental performance. A number of case studies are also presented. |
| The Market and the Environment | The Conference Board of Canada 255 Smyth Road Ottawa, Ontario K1H 8M7 Phone: (613) 526-3280 Fax: (613) 526-4857 | Provides a discussion of the potential and the mechanisms of market-based instruments for fulfilling environmental goals. Written for government and business. |
| Achieving Environmental Excellence: A Handbook for Canadian Business | The Canadian Chamber of Commerce 55 Metcalfe Street Ottawa, Ontario K1P 6N4 Phone: (613) 238-4000 Fax: (613) 238-7643 | Provides case studies on environmentally pro-active companies plus a guide to developing a corporate environmental strategy. |
| Competitiveness in the 90's Environmental Performance | Industry, Science and Technology Canada, British Columbia Region P.O. Box 11610 #900 - 650 West Georgia Street Vancouver, B.C. V6B 5H8 Phone: (604) 666-1416 Fax: (604) 666-8330 | Part of a series of case studies that examine the strategies British Columbia companies are employing to make themselves competitive in the marketplace. Provides evidence through the examples of eleven companies that improved environmental performance often results in improved profitability. |
| National Round Table on the Environment and the Economy: A Report to Canadians, June 1989-1990 | National Round Table on the Environment and the Economy 520 - 1 Nicholas Street Ottawa, Ontario K1N 7B7 Phone: (613) 992-7189 Fax: (613) 992-7385 | Presents the first report of the National Round Table. The current status and barriers to achieving sustainable development are discussed, along with new initiatives. |

Appendix F (Cont'd)**Suggested Reading List On Business And The Environment**

| Name | Contact Information | Description |
|--|--|---|
| B. Books and Publications cont'd. | | |
| In Business For Tomorrow: The Transition To Sustainable Development (Highlights of the GLOBE '90 Conference) | The Conference Board of Canada 255 Smyth Road Ottawa, Ontario K1H 8M7 Phone: (613) 526-3280 Fax: (613) 526-4857 | Documents the accomplishments of the GLOBE '90 international trade fair and conference held in Vancouver in March, 1990. Provides a synopsis of the main themes of conference discussions. |
| Canadian Waste Materials Exchange | Ortech International 2395 Speakman Drive Mississauga, Ontario L5K 1B3 Phone: (416) 822-4111 Fax: (416) 823-1446 | Provides a bulletin of by-product and surplus material listings from organizations across Canada. Waste materials are listed at no charge. |
| Success Stories Handbook | State of the Environment Reporting Environment Canada Hull, Quebec K1A 0H3 Phone: (819) 953-1440 Fax: (819) 953-3992 | Provides a collection of case studies of innovative environmental action undertaken by business and government in support of sustainable development. |
| C. Directories | | |
| Canadian Environmental Directory 1991 | Canadian Almanac and Directory Publishing Company Ltd. #207, 134 Adelaide St. East Toronto, Ontario M5C 1K9 Phone: (416) 362-4088 Fax: (416) 362-4181 | Provides a national directory drawing together the network of individuals, agencies, firms and associations active in environment-related activities. Also provides information, services, conferences, events, eco-consultants, and a resource management buyers guide. |

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Environmental action handbo
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or business

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