

Sustainable Development Training Course

annotated outline

Industry Canada Sustainable Development Training

One of the main objectives of Industry Canada's sustainable development strategy is to continue to improve the capacity of the department to manage and deliver departmental policies, programs and operations which contribute to sustainable development. Our priorities for the areas of stewardship and management are:

- to increase our capacity to make better decisions by continually improving awareness and understanding of the economic, environmental and social implications of existing and proposed activities; and
- to ensure that day-to-day physical operations at Industry Canada have minimal impacts on the environment

To address these priorities, Industry Canada has developed training programs designed to increase awareness and understanding among employees and management, as well as clients, and other stakeholders, regarding sustainable development matters.

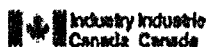
The purpose of this page is to serve as a repository for the training initiatives that are offered to departmental employees, and to share these with the broader audience that is afforded by the internet.

1. *Sustainable Development Training Course*. This is an annotated outline of the course that was developed for Industry Canada by Dr. Glen Toner of Carleton University. It was designed to provide managers, supervisors and policy and program officials with an enhanced understanding of sustainable development, associated policy challenges and related knowledge. The course, originally designed to run over one and a half days, consists of the three modules described below.

Module 1. Background of the international and domestic pressures as well as the opportunities to advance sustainable development.

Module 2. Description of the links between sustainable development, government objectives and activities of Industry Canada. Participants are asked for their views on what the department could include in its next Sustainable Development Strategy.

Module 3. Discussion of practical tools that can be used in both the public and private sectors to apply sustainable development objectives to decision-making and business practices.



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WELCOME TO THE FUTURE: IMPLEMENTING SUSTAINABLE DEVELOPMENT IN THE 21ST CENTURY KNOWLEDGE ECONOMY

The Industry Canada Sustainable Development Training Course

NOVEMBER 9 - 10, 1999

Presented by

Dr. Glen B. Toner Ph.D.

With the

assistance of

Kevin Brady M.E.S.



Instruction Team

Glen Toner is an expert in public policy implementation and in environment and sustainable development policy. Over the past eighteen years he has advised a number of federal government departments, including Industry Canada, Environment Canada, Natural Resources Canada, Indian and Northern Affairs, and the Office of the Auditor General. Dr. Toner co-founded the New Directions Group of industry and environmental Leaders. He chaired the multisectoral Advisory Committee for the *Guide to Green Government*. He founded and is a member of the Advisory Committee of the Commissioner of Environment and Sustainable Development. He teaches courses on Public Sector Management; Public Policy Theory; Business-Government Relations; the Science, Economics and Politics of Global Climate Change; Industrial Policy, Innovation and Sustainable Development; and Implementing Sustainable Development in Industrialized Countries in the School of Public

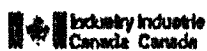
Administration at Carleton University where he is a Professor. He is also a founding member of CRUISE, the Carleton Research Unit in Innovation, Science and Environment policy. Dr. Toner is the author of numerous publications on energy and environmental policy issues. His most recent publication related to this course is "Rolling a Rock Uphill: The Struggle to Implement Sustainable Development in Canada." It is part of a ten country comparative study organised by research organisations in Norway and the United Kingdom. It will be published in William Lafferty and James Meadowcroft (eds.), *Bringing Rio Home: Implementing Sustainable Development in Industrialized Countries* (Oxford: Oxford University Press, 2000).

Kevin Brady - Director Five Winds International. Mr. Brady has been active in environmental work for the past ten years, primarily at the business and environment interface. Over the years he has worked in areas such as business strategies for sustainable development, product focused environmental policy, life cycle assessment, eco-efficiency indicators, sustainable consumption and production, state of environment reporting, ecosystem health, packaging and pollution prevention. He recently co-ordinated a review which examined how leading private and public sector organisations are integrating sustainability considerations into their core business practices. He also provided technical support to the National Round Table on Environment and Economy in their recent work on eco-efficiency indicators. In his tenure with the Government of Canada, Mr. Brady co-ordinated national and international activities related to product-oriented environmental policy and life cycle management for Environment Canada. In this capacity, Mr. Brady co-ordinated the development of the publication *Life Cycle Management: a Guide for Better Business Decisions*. He is the co-author of *Mapping the Journey: Case Studies in Strategy and Action toward Sustainable Development* (Sheffield: Greenleaf Publishing, 1999) (With Lorinda Rowledge and Russell Barton) He is currently Canada's Head of Delegation to the ISO sub-committee on Life Cycle Assessment and he acted as the Canadian representative to the ISO Climate Change Task Force. Mr. Brady holds a Masters of Environmental Studies from York University in Toronto.



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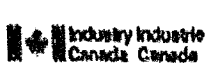


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Introduction and Overview

Historic occasions, like the dawning of a new millennium, provide an opportunity to reflect upon where we are at as a society and to contemplate what we aspire to become. Understanding where we are at requires an honest appraisal of our past. Over the last quarter of the 20th Century, we have begun to reassess the relationship between human society and the natural environment that sustains life. The last decade of the century has seen the emergence of an idea that represents a potentially dramatic break with past modes of thought and practice regarding the relationship of the society, economy and environment. The emerging global consensus that too many of our economic and social practices were unsustainable triggered the search for a more judicious balance between the needs of humans and the requirements of the earth's life-supporting eco-systems.

The 1987 World Commission on Environment and Development (WCED) Report, *Our Common Future*, was a signal development in this evolution of our thoughts and actions. Its popularization of the concept sustainable development has put in motion a series of developments that have impacted on public and private sectors all around the world. The impacts are as potentially profound for Canada as for other countries. (Gardner) Great ideas, however, do not fall from the sky "fully developed". Like seeds they must be planted and given time to grow. While we are at an early stage in the life span of the idea of sustainable development - the seed has definitely taken root. What is amazing, is how dramatic its growth has been over the first decade of its life. As Lafferty and Langhelle have argued

Though numerous critics have predicted a quick and definitive end to the idea, they have been proved decisively wrong. With the possible exception of 'democracy', there currently exists no more widely endorsed symbol for positive socio-economic and political change than 'sustainable development'. It is, quite simply everywhere... From the smallest local NGO, through all types of intermediate organisations and nation-states, to the United Nations, World Bank and European Union - it is what we are all (at least on paper) striving for. (Lafferty and Langhelle: vii.)

Thus, sustainable development has quickly taken on the stature of a principle, like democracy. Like democracy, it retains a widespread moral appeal. But also, like democracy, what really matters are the institutional and social practices put in place to achieve it.

"Sustainable development is an 'essentially contestable concept' which neither can nor should be 'resolved' through debate alone. It is the very 'robustness' and 'staying power' of the idea as a controversial idea, which renders it so interesting as a basis for planning and implementation." (Lafferty and Langhelle: vii) In other words, it is the pragmatic application of the idea in the real world actions of governments, international organisations and firms that will give it meaning. Ultimately, it is the actions of these organisations, not academic debate, which will determine the degree to which sustainable development becomes a guiding principle for socio-economic change in the 21st Century or is rendered to the dustbin of history

In one of its most profound insights, the World Commission on Environment and Development noted that:

...in the end, sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs. We do not pretend that the process is easy or straightforward.

(WCED: 9)

One of the goals of the Industry Canada Sustainable Development training course is to provide participants with a solid understanding of this process of change and its implications for the Canadian economy and society. By reflecting upon 'the direction and orientation' of investments, technological development, institutional change and resource development, participants will develop a perception of whether the overall direction of change is reinforcing or slowing the institutionalisation of sustainable development in the Canadian economic, social and political fabric. As *Our Common Future* acknowledges, social change is seldom 'easy or straightforward.' In western democracies, with their vast array of important political and economic actors, change is always a contested process. Making social change is normally an iterative process of small, incremental steps. This is seldom, however, a simple, linear process. There will be deviations and corrections and steps backward as well as forward. There will be barriers as well as opportunities.

Within this global context of social change, the Government of Canada chose to publicly announce its commitment to a policy of sustainable development, by releasing a document signed by the Prime Minister and all Cabinet Ministers. In the *Guide to Green Government* the Liberal government stated:

The Government of Canada firmly believes that our economic health depends on our environmental health. We firmly believe that the federal government can help shape a better future for all Canadians, a future characterized by sustainable development. This is why we want to play a leadership role in turning sustainable development thinking into action. This is why we are now taking the next step of establishing a framework in which environmental and economic signals point the same way; a framework which integrates sustainable development into the workings of the federal government - right across the board.

(Guide to Green Government: i-ii)

At the same time, the Cabinet announced two significant structural changes it was introducing to support the institutionalisation of sustainable development in the ongoing practices of the Government of Canada. It created "a Commissioner of Environment and Sustainable Development to hold government accountable for greening its policies, operations and programs." It also required each department to create a sustainable development strategy, which would "use the lens of its own mandate to ensure that appropriate consideration is given to the economic, social and environmental components of sustainable development."

(Guide to Green Government: ii)

This course is designed to facilitate an understanding of this process of change by moving from the macro historical, international context, through the national public policy context, to the on-the-ground changes taking place at the level of the firm. In 1997, Industry Canada produced its first Sustainable Development Strategy. That document, and the process by which it was created and assessed, is an institutional innovation, reflective of changes being made within the Government of Canada in response to the WCED's injunction to make institutional change that is 'consistent with future as well as present needs.' Now, all departments, including Industry Canada, must ask themselves if the 'direction and orientation' of the investment, technological and resource development and institutional change that they support through their work, are 'consistent with the future as well as present needs.' Industry Canada has acknowledged this challenge:

A sustainable economy is one that gives its people - both now and in the future - a high quality of life as measured by objectives such as secure and improving incomes, job opportunities, social and political stability, education, health, and a clean environment. It promotes human welfare through the integration of economic, environmental and social objectives and a balanced consideration of the needs of present and future generations.

(Industry Canada: 4)

Industry Canada supports the view that knowledge is the key to such long-term thinking:

The knowledge-based economy provides significant opportunities for sustainable development. Effective application of knowledge has the potential to enable new products to be developed in an environmentally sound manner. The use of knowledge can produce few of the by-products and little of the waste associated with material factors of production. As well, knowledge can be applied to ensure that other inputs, such as energy and resources, are used in ways that minimize negative environmental impacts. Knowledge-based industries can free up natural resources and contribute to sustainable development.

(Industry Canada: 5-6)

This training course is intended to contribute to better decision-making by enhancing a policy and program officer's knowledge of sustainable development concepts and practices. The course will be delivered in three parts. The first module will provide the general contextual background and outline the international and domestic pressures and opportunities for the public and private sectors to advance sustainable development. The second module will describe and explore the links between sustainable development and the

objectives and instruments of the federal government and Industry Canada. The third module will introduce and discuss practical tools that can be used in both the public and private sectors to apply sustainable development objectives to decision-making and business practices. Each module will be presented via a deck of overhead slides, an annotated outline and a summary text. Each module will include a list of key readings as well.

References

Canada, *A Guide to Green Government*, 1995.

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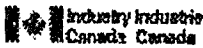


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Module 1: 1987- 1999 The Birth and Early Life of a New Approach

This module will be divided into five main sections

- Sustainable Development: the essence of the idea
- The '90s: Changes in the federal government to accommodate sustainable development
- Leading firms are incorporating sustainable development into their strategic plans
- Sustainable development is important for consumers as well as for industry
- The relationship of sustainable development to Canada's quality of life

The overall goal of this module is to provide a general contextual background that presents the international and domestic pressures and opportunities for the public and private sectors to advance sustainable development.

1. Sustainable development: the essence of the idea

Ideas do not fall from the sky 'fully developed.' They grow and emerge from seeds. This section will provide a history of the international and domestic influences on the evolution of the idea

- Some key events that will be focussed on are: (see IISD Sustainable Development Timeline)
 - 1962 Rachel Carson, *Silent Spring*
 - 1972 Limits to Growth
 - 1972 United Nations Conference on Human Environment /UNEP
 - 1980 World Conservation Strategy
 - 1987 WCED, *Our Common Future*
 - 1990 Green Plan
 - 1992 World Business Council on Sustainable Development, *Changing Course*
 - 1992 United Nations Conference on Environment and Development at Rio; Agenda 21
 - 1993 Liberal's *Creating Opportunity*
 - 1993 U.S. President's Council on Sustainable Development
 - 1995 Guide to Green Government

- 1997 First generation Sustainable Development Strategies
- growing pressures on the earth's carrying capacity from population growth, economic growth and resource use, along with issues of intergenerational equity, resource stewardship, and social responsibility will keep sustainable development at the centre of decision maker's strategic considerations.
- Canada is better off than many parts of the world when it comes to environmental quality, yet environmental problems remain.
 - Some of the relevant issues in the debate about the meaning of sustainable development, include:
 - interminable, decade-long academic debate deconstructing and redefining the concept of sustainable development results in much ink dedicated to semantic nuances.
 - what really matters is adoption by the mainstream of society, insertion into politician's discourse and bureaucratic and corporate planning.
 - 'sustainability' can be viewed as a qualifying condition for 'development'.
 - WCED's future oriented definition highlights both needs and limitations and acknowledges sustainable development not as an endpoint but as a process of change.
 - sustainable development is an approach to growth that involves the systematic consideration of the environmental, social and economic impacts of policy decisions and ongoing operations in both the public and private sectors, in order to enhance economic prosperity, environmental quality and social justice.

2. The '90s: Changes in the federal government to accommodate sustainable development

The 1997 Sustainable Development Strategies marked a new stage in the decade long evolution of sustainable development. The 1990s have seen a number of significant developments introduced to institutionalise sustainable development practices in the public sector. There will be a brief discussion of each of the following key events and their significance.

- 1987 National Task Force on Environment and Economy
- 1989 National Round Table on the Environment and Economy
- 1989 A Greenprint for Canada
- 1990 Green Plan
- 1990 Environmental Stewardship/ Greening of Government Operations
- 1990 International Institute for Sustainable Development
- 1993 Creating Opportunity - Chapter 4
- 1995 Guide to Green Government
- 1996 Amendment to AG Act -- Commissioner of Environment and Sustainable Development

- 1997 1st CESD Report
- 1997 28 Sustainable Development Strategies
- 1998 2nd CESD Report
- 1999 3rd CESD Report
- 1999 Commissioner's expectations document
- 1999-2000 next SDS round underway
- December 15, 2000, Second SDS Reports due

3. Leading firms are incorporating sustainable development into their strategic plans

Why? In response to pressures from competitors, regulators, customers, employees, shareholders and the public.

- the World Business Council on Sustainable Development (WBCSD) lists the following reasons to be proactive: socially responsible management; competitive advantage; liability reduction; cost savings-bottom line; employee morale; increasing regulatory standards; supply chain demands from downstream clients.
- while sustainable development poses challenges it also creates opportunities for leading organisations. Leaders are thinking in terms of systems of sustainable production and consumption - including sustainable building, transportation, energy and distribution systems - and situating their firms within them
- in any process of social and economic change we will always have leaders, followers and laggards. This is also the case here.
- innovative organisations invariably have strong leadership at the top.
- sustainable production is now a serious industry issue. The whole production process is now being re-examined through the lens of concepts such as; eco-efficiency, pollution prevention, product stewardship, industrial ecology, life cycle analysis, environmental management systems, green design, eco-industrial parks, and, supply chain management.
- Canadian firms are not alone in struggling with these issues. Rather, along with federal departments, they are part of an international response that involves UNEP, CSD, OECD, ISO, WBCSD, WB, and WTO.
- firms cross the whole spectrum from those minimally coping to those redefining the purpose of their company by institutionalizing a sustainable development orientation.
- leading firms are open to challenging themselves and to engaging the broader community through partnerships.
- sustainable development is a journey...of innovation. The market is beginning to pay attention and environmental and ethical investment funds are emerging which assess companies against a high standard of practice and behaviour.

4. Sustainable development is important for consumers as well as for industry

Consumer demand can affect supply and influence the production process. Sustainable consumption has been on the formal agenda since Agenda 21. While, arguably, the literature is not as well advanced here as with sustainable production, there is an emerging body of new practices that gives the role of consumers increased importance.

- several new ideas and concepts are now in play. For example, the conceptualisation of the household as a key consumptive unit in the concept of household metabolism.
- consumer response depends in large part on information availability. Eco-labelling schemes can play an important role, both in product certification, performance measurement, and information sharing.
- Waste reduction and management, and recycling are important to individual consumers as well as to the retailers they have direct contact with. Much of the pressure here is coming from consumers.
- new forms of consumption are emerging. Product environmental standards are becoming commonplace. Moreover, goods we have always viewed as products are being reconceptualized as services, and in some cases substituted by services.
- Green procurement programs are now becoming commonplace in both public and private sector organisations and are influencing the marketplace.

5. The relationship of sustainable development to Canada's quality of life

To date, sustainable development discourse in Canada (and elsewhere) has focused more on the environment-economy linkages than on the social dimensions. While the focus on this linkage has produced quality of life improvements, organisations are also beginning to examine the social context of the communities within which they operate.

- we have ample evidence that unsustainable practices in the fishery and forestry sectors (for example), have devastating social consequences and horrendous negative implications for the standard of living and quality of life of resource harvesting communities, regions and provinces.
- innovative practices and technologies regarding environmental stewardship and sustainable production will be in demand around the world as countries and companies seek to address the same pressures and opportunities that Canadians face. The trade and export opportunities as well as domestic growth opportunities that flow from exploiting our expertise to create innovative technologies and practices will add to both our national income and standard of living.
- improved environmental practices have contributed to the reduction of some toxics and other pollutants in the biosphere which add significantly to the quality of life of all Canadians. Yet, water and air pollution continue to cause health concerns for Canadian communities, both urban and rural. Indeed, the links between the physical and social

environments, human well being and community health are becoming increasingly clear.

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Module 2: Industry Canada in the Sustainable Development Era.

This module will be divided into three main sections

- The links between sustainable development and government economic priorities
- Sustainable development, the knowledge economy and Industry Canada's mandate
- Sustainable Development: Its influence on policy instruments

1. The links between sustainable development and government economic priorities

- responsibility for sustainable development is shared across government and each Minister is accountable for making measurable progress on sustainable development within the sphere of his/her mandate
- knowledge is a fundamental factor in improving the efficiency of production and distribution processes, improving the quality and quantity of products, and increasing the selection of products and services available to consumers and producers. Knowledge increases competitiveness and promotes sustainable development
- the knowledge economy involves the application of systems of knowledge to address social needs. Sustainable development is about applying knowledge systems (eco-efficiency, green design, life cycle assessment, for example) to industrial products and processes in order to improve efficiency, decrease costs and improve environmental quality
- Industry Canada's Sustainable Development Strategy explicitly integrates the department's functions and goals with the sustainable development agenda. Indeed, much of the department's mandate focuses on enhancing the efficiency of Canadian industry and on encouraging sustainable consumption. Sustainable consumption is defined as "the use of goods and services that respond to basic needs and bring a better quality of life while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations."
- the 'captains of industry' who belong to the World Business Council on Sustainable Development have introduced the concept of eco-efficiency to promote sustainable production. "Eco-efficiency is reached by the delivery of competitively priced goods and services that satisfy human needs and bring quality of life while progressively reducing

environmental impacts and resource intensity throughout the life cycle, to a level at least in line with the Earth's carrying capacity." Its seven principles are recognised in Industry Canada's Sustainable Development Strategy

- a key feature of eco-efficiency is that it harnesses the business concept of creating value and links it to environmental management. The WBCSD is highlighting the links between eco-efficiency, productivity and competitiveness.
- mutual funds and other institutional investors are becoming increasingly attracted to firms that practice eco-efficiency and consider their social impacts.

2. Sustainable development, the knowledge economy and Industry Canada's mandate

- eco-efficiency is the 'business end' of sustainable development.
- what is different about the knowledge-based economy is our increased understanding of the role of knowledge in the process of economic growth and the importance of knowledge in determining the competitiveness of firms. Firms that will be the most successful in this economy are those that create, acquire and apply knowledge.
- Sustainable development planning is a fundamental feature of the knowledge-based economy. In the public sector, this involves employing cutting edge analytical and policy tools so that governmental policies, programs and operations support and reinforce the adoption of sustainable development practices in the economy and society. In the private sector, it entails applying knowledge systems to rethink production processes to reduce material and energy intensity and toxic dispersion, and to enhance recyclability, durability and the service intensity of goods and services. For Industry Canada, sustainable development planning means systematically assessing the environmental, social and economic impacts of the programs and policies the department currently has, or may in the future introduce, in order to support innovative, sustainable practices in the private sector.
- to contribute to the development of integrated decision making and improved environmental management of operations, the Commissioner of Environment and Sustainable Development has launched a number of long-term projects to advance the understanding of sustainable development knowledge systems and analytical tools. In this work, the Commissioner's Office is co-operating with federal departments and the Canadian Institute of Chartered Accountants and learning from innovative work done at the World Bank, OECD and in other national jurisdictions. Some of the innovative analytical tools that are being worked on are: foresight initiatives; strategic environmental assessment; multiple accounts analysis; and national environmental accounting. Innovative performance measurement and accountability systems are also being developed as part of the sustainable development strategy assessment process.
- this section addresses the links between sustainable development and Industry Canada's policy objectives in innovation, marketplace climate, connectedness, and trade and investment. In addition, the department's environmental stewardship and management approach will be reviewed. The 1997 Industry Canada Sustainable Development Strategy identifies a number of links between the department's activities and sustainable development.

"The Strategy concentrates on pragmatic aims such as making eco-efficiency and environmental management systems work, finding means to diffuse sustainable development technologies and using the most appropriate mix of policy instruments."

- While the 1997 Strategy provides the department with a solid core, expectations, naturally, will be higher for the second strategy due in December 2000. We will consider some of the challenges facing the 2000 Strategy.

3. Sustainable Development: Its influence on policy instruments

- management of horizontal initiatives such as sustainable development -- which cuts across disciplinary, program and sectoral lines - requires a concerted effort to develop the necessary skills and tools.

- this section will explore potential changes in policy instruments available to governments to promote sustainable development

- legislation and regulation are the key 'command and control' tools of government; they are increasingly combined with other instruments such as voluntary agreements and economic instruments to shape the policy framework

- Industry Canada has reformed two of the department's marketplace framework statutes - the Bankruptcy and Insolvency Act and the Companies' Creditors Arrangement Act - to advance sustainable development objectives by promoting the clean-up of environmentally contaminated properties of bankrupt debtors. The department has undertaken pioneering work to develop a framework for assessing sustainable development impacts of legislation and applied it to its revisions to the Canada Business Corporations Act.

- Industry Canada has been a major proponent of voluntary approaches to environmental management at the individual company, sectoral, and government-wide levels. The department recognises that these approaches can be an important complement to other policy instruments, and in some cases can even replace them.

- the department is also a strong supporter of marketplace analysis and information instruments. In the sustainable consumption area, information systems designed to help consumers integrate sustainable development considerations into their purchasing decisions are important. The Environmental Choice Program run by TerraChoice Environmental Services, as well as technology awareness programs are examples.

- fiscal tools, of both the tax and non-tax varieties, are important government tools, though not, for the most part, directly the responsibility of Industry Canada. The government's dramatically improved fiscal condition and concerns about productivity and efficiency increase the likelihood that this debate about the nature and impact of the tax system will be back on the policy agenda early in the new century. The climate change policy issue will be on driver of this debate, along with a desire to reduce taxes on employment.



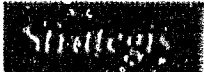
- various financial support programs are use to encourage technological advancement. Government support programs for environmental technologies include Technology Partnerships Canada. Such initiatives must increasingly pass scrutiny by the WTO system.

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Module 3: Implementation Tools for Sustainability

(Presented by Kevin Brady)

Session overview

This training module will be divided into three main sections

- **Global trends and drivers**
- **Governmental Roles**
- **Industrial Tools**

1. Global trends and drivers

This section will outline some of the main drivers behind a shift to more sustainable production practices. It will illustrate why there has been a sea change in thinking with respect environmental and social aspects of industrial activity and why leading companies have embraced advanced environmental management tools as a means to achieve competitive advantage

- Sustainable production - economic and environmental rationale
 - key ecological drivers - climate change, ozone depletion, toxic substances, population trends, biodiversity etc..
 - key economic drivers - cost reduction, innovation, reduced business risk, occupational health and safety, price premiums, market opportunities,
- Evolution of environmental management from compliance to eco-efficiency to sustainability.
- Core competencies of leading companies - based on a review of 10 leading multi-national companies this section will outline the key strategies and tools being utilised by these companies to move toward sustainability
- The environmental management hierarchy - the strategies, management systems, programs, tools and data used by companies to achieve implementation.

2. Governmental Roles

Over the last seven years there has been near exponential growth in international activity related to private and public sector environmental management and sustainable development issues. This activity has its origins in the 1987 report of the World Commission on Environment and Development (Our Common Future) and the 1992 UN Conference on Environment and Development (UNCED) held in Rio de Janeiro. Our Common Future set out a vision for sustainable development that integrated economic, social and environmental concerns. The UNCED conference took this vision and translated into a series of actions for governments around the world. At UNCED governments and industry made a formal commitment to develop and promote more sustainable forms of consumption and production.

Based on a review of six OECD governments (Sweden, Netherlands, Australia, UK, Germany, and USA) and the European Union this section will highlight the "tool-box" being utilised by governments to promote sustainable production. Examples will include:

- Extended producer responsibility programs - e.g. end-of-life vehicle regulations, product take back or electrical and electronic equipment
- Voluntary programs - e.g. Dutch covenants and eco-design programs
- Economic and financial instruments - e.g., Swedish eco-taxes
- Information and Capacity building programs - RMIT's eco-design program
- Integrated product policy - policies aimed at reducing the environmental impacts of products and their supply chain while simultaneously increasing competitiveness and stimulating innovation

Details of various programs will be provided and how they may or may not contribute to sustainable production will be explored. An overview of the key elements of a sustainable industrial strategy will be outlined.

3. Industrial Tools

Leading companies have translated the environment from a marginalized management concern into a strategic issue that relates directly to efficiency and competitiveness. These companies are going beyond compliance to embed environmental and sustainability issues into their core business practices. Numerous case studies have demonstrated that this approach can result in the following benefits:

- reductions in operating costs,
- production and process improvements
- reduced liability and risk
- enhanced brand image
- increased employee moral
- increased opportunity for innovation
- increased opportunity for revenue generation - new markets and price premiums
- better supply chain management and better

Box 1: Tools and management systems to support SD in industry

Cleaner production guides
 Corporate Environmental Reporting
 Design for Environment
 Design for Disassembly
 Eco-auditing
 Eco-compass
 Eco-efficiency

- better supply chain management and better relationships with customers

The achievement of these benefits has been facilitated by an explosion of concepts and tools to assist companies in moving toward more sustainable forms of production (see box 1).

This section will outline the key features and applications of a number of these tools. Actual corporate application of the tools will be presented. Tools covered will include.

Eco-Industrial Parks
Eco-profiling
Environmental Auditing
Environmental Management Systems (EMAS, BS-7750, ISO 14001)
Environmental performance measures
Life Cycle Assessment
Life Cycle Costing
Life Cycle Management
Life Cycle Value Assessment
Pollution Prevention
Standards - ISO 14000 and various National environmental standards
Supply Chain Management

1. Five Winds International's Five Strategy Levels. Companies can be characterized into five different strategic categories depending on how they view environmental issues. The choice of strategy has important significance for the choice of management systems and tools and for whether the company can realise business and environmental benefits.
2. Design for environment - the most effective point to address environmental issues is now recognised to be at the product design stage. How this is being done and what it means for the selection of materials and energy will be examined.
3. Life cycle assessment - the key tool for measuring the environmental impacts of product systems - applications include, product and process improvement, benchmarking of environmental performance, measurement and verification of greenhouse gases
4. Environmental management systems - the preferred approach to managing the environmental aspects of organisations and facilities. The essential elements of EMS and why it is an effective tool will be explored
5. Environmental supply chain management - leading companies are implementing supplier management programs to:
 - reduce their costs and liabilities
 - meet their own policy requirements - Environmental management systems now include statements regarding working with their suppliers
 - maintain a competitive position

- meet customer expectations
- address regulatory initiatives which encourage outreach on EM and product stewardship

Examples will be used to demonstrate this trend and how it can affect market access and improve the environmental performance of the supply chain

6. Environmental management Systems (EMS) and ISO Environmental management standards

An Environmental Management System (EMS) is the organizational structure, responsibilities, practices, procedures, processes, and resources for implementing and managing an organization's environmental affairs while ensuring conformity to its policies, standards, and stakeholders' expectations. The business and environmental benefits of implementing an EMS are described with examples from organizations across North America.

The International Organization for Standardisation is progressing rapidly with the development of their environmental management standards -- the ISO 14000 series. The role of these standards in improving and evaluating the environmental performance of organizations and product systems will be examined.

7. Corporate environmental reporting and eco-labelling -



Increasingly companies are taking their environmental message to the marketplace. Key audiences are customers, institutional investors, and regulators. Tools for reporting (Corporate environmental report, eco-labels, and product declarations) will be examined using examples from companies. Future trends and issues will be explored.

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Industry Canada Sustainable Development Training

One of the main objectives of Industry Canada's sustainable development strategy is to continue to improve the capacity of the department to manage and deliver departmental policies, programs and operations which contribute to sustainable development. Our priorities for the areas of stewardship and management are:

- to increase our capacity to make better decisions by continually improving awareness and understanding of the economic, environmental and social implications of existing and proposed activities; and
- to ensure that day-to-day physical operations at Industry Canada have minimal impacts on the environment.

To address these priorities, Industry Canada has developed training programs designed to increase awareness and understanding among employees and management, as well as clients, and other stakeholders, regarding sustainable development matters.

The purpose of this page is to serve as a repository for the training initiatives that are offered to departmental employees, and to share these with the broader audience that is afforded by the internet.

1. *Sustainable Development Training Course*. This is an annotated outline of the course that was developed for Industry Canada by Dr. Glen Toner of Carleton University. It was designed to provide managers, supervisors and policy and program officials with an enhanced understanding of sustainable development, associated policy challenges and related knowledge. The course, originally designed to run over one and a half days, consists of the three modules described below.

Module 1. Background of the international and domestic pressures as well as the opportunities to advance sustainable development.

Module 2. Description of the links between sustainable development, government objectives and activities of Industry Canada. Participants are asked for their views on what the department could include in its next Sustainable Development Strategy.

Module 3. Discussion of practical tools that can be used in both the public and private sectors to apply sustainable development objectives to decision-making and business practices.



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