

FOIA MARKER

This is not a textual record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

Collection/Record Group: Clinton Presidential Records
Subgroup/Office of Origin: Council on Environmental Quality
Series/Staff Member: Kathleen (Katie) McGinty
Subseries:

OA/ID Number: 2892
FolderID:

Folder Title:
Environmental Business Council

Stack:	Row:	Section:	Shelf:	Position:
S	61	5	11	2

for
973-1685
1688
Hurd
fore

Environmental Business Council, Inc.

Exchange Place, 53 State Street, Suite 3400, Boston, MA 02109
Telephone: (617) 367-0282 • Fax: (617) 227-7566

Board of Directors

Donald L. Connors, Esq., Chairman
Choate, Hall & Stewart

John (Jack) N. Driscoll, President
HNU Systems, Inc.

G. Mead Wyman, Treasurer
Hambrecht & Quist Venture Partners

Anthony D. Cortese, Sc.D.
Tufts University

Ghazi Darkazalli, Ph.D.
Spire Corporation

Kathleen F. Hagan
Hagan and Company

Merna Hurd
Air & Water Technologies Corporation /
Metcalf & Eddy

Arthur N. Mabbett
Mabbett, & Associates, Inc.

John A. S. McGlennon
ERM-New England, Inc.

Daniel K. Moon
Longwood Environmental Management

W. Dennis Moran
Camp Dresser & McKee International,
Inc.

Sherry H. Penney, Ph.D.
University of Massachusetts

Dean I. Schaffer
Ernst & Young

Daniel S. Tedone
Pollution Control Technologies, Inc.

Stephen A. Wallis
Woodcliffe Corporation

Executive Director

Diana S. Coates

THE FEDERAL ROLE IN SUPPORTING THE
U.S. ENVIROTECH INDUSTRY

Submitted by:
The Environmental Business Council

Donald L. Connors
Chairman

John N. Driscoll
President

Jack H. Archer
Public Affairs Counsel

THE FEDERAL ROLE IN SUPPORTING THE U.S. ENVIROTECH INDUSTRY

THE INDUSTRY IS IN A CRUCIAL PHASE

The U.S. environmental business and industry (the envirotech industry) has entered a crucial phase of its development. Largely created during the past two decades in response to powerful national mandates to clean up water and air pollution and hazardous wastes, the industry's share of the gross domestic economic product has grown to an annual figure of approximately \$120 billion. It is a diversified industry producing a broad range of environmental products and services. Yet, in contrast to Japan and Germany, the U.S. has only recently become aware of the great potential for growth through export of its hard-won environmental technologies and management expertise. Estimates of the potential global demand for environmental products and services range as high as \$600 billion over the next 10 years.

The Environmental Business Council, Inc. (EBC), the Nation's first organization created by the envirotech industry, academic institutions, and state government to promote environmental business and technological development, was established in Boston in 1990. EBC will soon become a national envirotech business organization -- an event that we believe will mark the industry's coming of age as a significant player

in the U.S. economy. In order to meet the growing global demand for environmental products and services, the EBC proposes several critical actions, as described below.

REMOVING OBSTACLES TO GROWTH

The founders of the EBC strongly believe that the envirotech industry bears the greatest responsibility to develop itself both domestically and internationally. At home the industry has experienced dramatic growth over twenty years in response to federal and state law requiring environmental protection and management. Globally the U.S. industry has been slow to take advantage of emerging opportunities for growth for several reasons. Many are small to medium sized companies which are less able than well capitalized and nationally supported foreign competitors to make the investment required to develop business abroad. Changing budgetary, regulatory and enforcement policies both here and abroad have provided disincentives for technology development. There has also been a lack of adequate financing for exports from both public and private sources. But a major obstacle to the export of environmental technology and services has been the lack of support at the federal level for the U.S. industry with respect to both policy, programs, and financing. In terms of national policy, the federal government has neglected the envirotech industry's potential for export growth. No coordinated federal policy or program exists to

encourage the export of and to make use of our substantial competitive advantage in environmental technologies and management expertise.

RECOMMENDED ACTIONS

To remedy this neglect, we recommend a set of related actions by the Clinton-Gore Administration, to be carried out cooperatively with the envirotech industry, which will establish the Administration's priority of supporting the industry both at home and abroad. Our recommendations are aimed primarily at establishing a coherent, workable national policy, which will set the stage for cooperation and coordination between the industry and federal agencies. Our emphasis is upon export development.

Two critical goals of the Clinton-Gore Administration are served by federal support to help develop the U.S. envirotech industry -- (1) significant improvement in global environmental protection and management of resources for sustainable use and (2) domestic economic growth both by increasing the export of U.S. environmental products and services and by strengthening the envirotech industry at home. This federal support should be provided in two basic forms. First, the Clinton-Gore Administration should establish a strong, clear national policy to achieve the dual goals of balanced global environmental management and domestic economic growth. Second, the Administration can provide funding over a limited period to

assist the envirotech industry in the United States to increase its share of the rapidly-growing global market for environmental products and services. This document proposes an action agenda to achieve these two linked goals.

IMPLEMENT RECENTLY ENACTED LEGISLATION

The following actions at the federal level should be taken:

1. EXPORT ENHANCEMENT ACT -- In the short term, to support the export of environmental products and services, recently enacted legislation should be quickly implemented. For example, the environmental trade promotion provisions (Title II) of the Export Enhancement Act of 1992 (Pub. L. 102-424) should be carried out. In particular, the "Environmental Trade Promotion Working Group" created by this legislation should be established among the designated federal officials and charged by the President through an executive order to prepare its recommendations to enable federal agencies to promote the export of environmental technologies, goods, and services. These recommendations may include regulatory changes, legislative proposals and other federal agency actions to help get existing technology to the right place at the right time.

A fundamental problem in the Export Enhancement Act, however, is its reliance solely upon federal officials for developing and implementing the recommendations to promote the export of environmental products and services. Industry

participation is neglected. We believe that this problem can be remedied by the creation of a new national strategy, including new legislation, as described below. Nevertheless, we recommend that the provisions of the Export Enhancement Act be acted on as soon as possible, but in anticipation of the new legislation to be enacted.

The provisions of the Export Enhancement Act providing for a range of "overseas services for exporters" of environmental products and services should be implemented without delay. Finally, federal agencies implementing the Act must recognize that the export of environmental services is fully as important as the export of environmental products, and that the two categories are closely related. Unfortunately, this linkage has been ignored and the export of services has not been sufficiently supported. Our national trade policy should promote the export of environmental services on a par with environmental products, recognizing that the former often leads to the latter.

FREEDOM SUPPORT ACT -- In addition, the Freedom Support Act of 1992 (Pub. L. 102-511) provides substantial opportunities for the envirotech industry to participate in any program of economic assistance to the republics of the former Soviet Union that may be approved by the new Administration. Under this Act, environmental technologies, training, and education may be

provided by U.S. business, non-profit organizations, and universities to these emerging democracies. \$417 million has been appropriated to carry out the Act. We recommend that a reasonable portion of these funds (\$30 million) be allocated to support providing U.S. environmental technologies and business and management experience to these countries. The Departments of State and Commerce should be required to implement these provisions of the Freedom Support Act as soon as possible.

ENACT NEW ENVIROTECH PRODUCTS AND SERVICES EXPORT DEVELOPMENT LEGISLATION

2. To ensure the participation of the envirotech industry in developing exports of environmental products and services, we propose enacting legislation providing the following:

- * a comprehensive statement of federal policy to develop and support the export of U.S. environmental products and services, based upon the active participation by the private envirotech industry, federal and state agencies, institutions of higher education, and the public.

- * a process by which the envirotech industry, federal and state agencies, and institutions of higher education and the public may cooperatively devise an appropriate national strategy to promote the export of environmental products and services addressing all environmental sectors (air, water, hazardous materials, natural resources, including coastal and water

resources). This strategy could seek to maximize the opportunities for export development initially in target countries such as Mexico, Brazil, Turkey and Taiwan which are able to commit substantial resources to develop national programs of environmental management in the next decade. Second, building upon the provisions of the Freedom Support Act, this strategy could include a plan to cooperate with the countries of the former Soviet Union and Eastern Europe in meeting their needs for new environmental technologies and management expertise through a variety of techniques (loans, joint ventures, etc.). Third, the strategy may link NAFTA-implementation legislation to specific actions by Mexico and the U.S. to secure substantial improvements in environmental management programs. For example, such legislation might require and support active, cooperative actions by national trade organizations such as the EBC and the Mexican Chamber of Industrial Organizations (CONCAMIN) to adopt new environmental technologies and management strategies to ensure compliance with Mexico's environmental laws. Fourth, this strategy could seek in appropriate ways to use both U.S. and international aid programs to developing countries to provide U.S. environmental products and services. Fifth, the strategy could seek authority for the Export-Import Bank to make low interest loans to assist the U.S. envirotech industry abroad in both developing and developed countries in carrying out joint enviro-business

ventures. Finally, the strategy could include additional export enhancement measures (direct grants, subsidies, low-interest loans, loan guarantees, tax incentives, etc.) to support the export of U.S. envirotech products and services.

* modest funding (e.g., \$25 million per year) for a period of five years to support activities by an independent, non-profit organization (the "Environmental Business and Technology Institute") to be operated by the envirotech industry in cooperation with the federal and state governments. The Institute would be organized with a central office and several regional affiliates. Its major tasks would be: (1) to identify target country and area needs with respect to appropriate environmental technologies and management strategies in certain environmental sectors including air, water, hazardous materials, land resources, and coastal and ocean space and resources; (2) to assist industry on a regional basis in export development by establishing and maintaining business relationships with foreign governments, business, and industry in need of environmental products and services; and (3) to conduct programs of training and education in cooperation with industry and institutions of higher education in environmental management technologies and strategies.

To demonstrate the effectiveness of such support activities, the Institute would initially conduct a demonstration project targeted upon a specific area (e.g., Russia and other CIS countries).

* creation of a volunteer Environmental Services Corps which could mobilize the energies and expertise of hundreds of Americans experienced in environmental technologies and management to assist in carrying out environmental projects and building the environmental management capacity in other countries.

WHITE HOUSE ENVIROTECH - EXPORT CONFERENCE

3. To highlight the importance of developing the export of environmental products and services, the Administration should hold a White House envirotech-export conference soon after taking office. This one-day conference would bring together 150 leaders of the envirotech industry, federal and state officials, representatives of environmental organizations, academia, and the public to review proposals to achieve economic growth through the export of U.S. environmental products and services. The EBC would help sponsor this conference and suggest appropriate attendees. The Administration could use the conference as the occasion to announce a series of actions, as recommended in this note, to support the development of the U.S. envirotech industry: implementation of the Export Enhancement Act and of the Freedom Support Act (e.g., announce the appointments of the Chair of the Environmental Trade Working Group and the Coordinator of the Aid Program for the former Soviet Union), new envirotech legislation, etc. The format and

agenda for the proposed conference are outlined in the attached memorandum.

MARKET-BASED INCENTIVES

4. To promote the continuing development of domestic environmental management programs, we endorse the recommendation to adopt market-based incentives to achieve environmental objectives. In addition, and in light of the fact that more than 30% of the U.S. envirotech industry manufactures environmental products, we urge the new Administration to support investment tax credits for envirotech industry investing in new facilities and equipment.

CLEAN FUELS POLICIES

5. With regard to national energy policy generally, we support proposals that would increase energy conservation and efficiency and provide for demand-side management. Specifically, to support the development of new and cleaner energy sources and to reduce environmental pollution and to create jobs, we recommend policies and incentives to encourage the use of sustainable development fuels over the next decade: solar, wind, and geothermal. For example, installed geothermal capacity in the United States could be doubled over the next 12 years by adding 2,500 MW of new plant capacity. Development of the U.S. geothermal power industry could also help equip the

industry to exploit development opportunities abroad, especially in the former Soviet Union, Mexico, Indonesia, the Philippines and Africa.

9611C

WHITE HOUSE CONFERENCE ON GLOBAL OPPORTUNITIES FOR THE
U.S. ENVIROTECH INDUSTRY

Chair: Vice President Gore

Number of Participants: Not more than 150

Participants: CEOs of small, medium and large environmental products and services companies that have products, services and technologies that can be exported, appropriate federal and state officials, members of Congress, legislators, investors, representatives of research and academic institutions.

One-day Conference, to be held in Washington, D.C., early in the new Administration.

Objective of Conference

The participants in the Conference will review proposals to create an effective public-private partnership to support the development of the U.S. Envirotech industry and the export of envirotech products and services.

Issues

Effective Public-Private Sector Cooperation: The Federal Role in Supporting the U.S. Envirotech Industry.

Export Financing -- 80% of the approximately 50,000 U.S. environmental firms have fewer than 50 employees. The greatest potential for export growth and job creation lies in developing these small- and medium-size firms through export financing: long-term loans for joint ventures, direct grants, subsidies, low-interest loans, loan guarantees, tax incentives, insurance and other forms of assistance.

Marketing: Implementing the New Provisions of the Export Enhancement Act of 1992.

Technology Development and Commercialization -- Technological advances have been made by national laboratories, research institutions and universities and the defense industry which can be used to help the U.S. become the leader in the global envirotech industry. A concerted national effort must be undertaken to bring these technologies to the marketplace.

Education and Training -- Small- and medium-size companies must be trained to export effectively. In addition, the envirotech

industry requires a trained workforce. Finally, the training and education of foreign companies and government officials in the U.S. is an effective tool for marketing U.S. products and services. The Conference would review proposals to meet these multiple training needs.

Conference Agenda

Welcoming address by Vice President Gore:

Briefings and Discussions:

Overview of Conference -

Donald L. Connors,
Chairman, EBC

"The U.S. Competitive
Advantage in the Global
Envirotech Market"

Professor Michael Porter
Harvard University

"Evolution of the U.S.
Envirotech Industry:
Opportunities in the Global
Market"

Grant Ferrier, Editor
Environmental Business
Journal

"The Federal Role"

EPA, Commerce, Energy,
State, State Government,
EXIM Bank

"Envirotech Industry
Perspectives"

Representatives from
Industry Sectors

NOTE: The Conference would be organized as a one-day meeting, with morning and afternoon sessions and a luncheon with speaker (UN official, prominent envirotech industry leader, or federal government official). Appropriate materials would be prepared for the conference.

9706C

Draft Insert for President Clinton's Inaugural Address on
Supporting the U.S. Envirotech Industry

THE FEDERAL ROLE IN SUPPORTING THE U.S. ENVIROTECH INDUSTRY

It is time for the United States to end the conflict between environmentalism and economic development. We must recognize what the rest of the nations of the world who participated in the United Nations Conference on Environment and Development, held last June in Rio de Janeiro, Brazil, already recognize: the future belongs to those countries who are willing to implement both objectives.

One way to help the world manage its resources in a sustainable manner and to promote economic growth at home is through supporting exports of U.S. environmental technologies, goods, services, education, and training. The United States envirotech industry has the skills and know-how to do this, but lags behind industry in other countries in taking advantage of a burgeoning international market. To catch up with our allies and promote our expertise in this area, I am asking Vice-President Gore to convene, at the earliest practical opportunity, a White House conference on the growth and export potential of the U.S. envirotech industry. The conference

should include leaders of the envirotech industry, non-profit organizations, research and academic institutions, and interested federal and state agencies, and should have as its goal the development of a comprehensive national strategy to promote the export of U.S. environmental technologies and services.

I am also asking my new Secretary of Commerce, Ron Brown, to appoint a high-level official to chair the Environmental Trade Promotion Working Group and, in conjunction with the agencies represented on that Group, especially the Environmental Protection Agency, to assist the Vice-President in coordinating the actions of federal agencies to support the export of environmental products and services. Finally, I expect to work with the U.S. envirotech industry and the Congress to develop and pass new federal legislation to create a true public-private partnership to support the envirotech industry and the export of environmental products and services.

I envision the partnership bringing together the resources of many federal and state agencies to assist with export development while relying primarily on the private sector to develop new products and services and markets for those products and services. To support the nascent envirotech industry in the initial phase of its growth, I will propose that one element of

the partnership be the creation of a new Environmental Business and Technology Institute to work with the envirotech industry in its export development activities and to foster long-term business-to-business relationships to facilitate technology cooperation globally.

Finally, I will be submitting to the Congress new legislation to create an Environmental Services Corps. The Environmental Services Corps will send experienced U.S. environmental professionals to other countries to help build their capacity to implement quality environmental management programs. These efforts will be closely coordinated with our obligations to provide technical assistance under Agenda 21 adopted at the Earth Summit.

4405c

ENVIRONMENTAL BUSINESS COUNCIL, INC.**CONCEPT OUTLINE - 1/4/93****THE FEDERAL ROLE IN SUPPORTING THE UNITED STATES
ENVIRONMENTAL INDUSTRY****THE U.S. ENVIRONMENTAL INDUSTRY (ENVIROTECH) ENTERING CRITICAL
PHASE OF DEVELOPMENT**

- Domestic market now \$120 Billion.
- Global market by year 2002 - \$600 Billion.
- Diversified industry about 50,000 companies, all sectors.
- U.S. is behind Germany and Japan seeking to serve the market.

ENVIRONMENTAL BUSINESS COUNCIL, INC. (EBC) ORGANIZED 1990

- Manufacturers of environmental and energy products, service firms, academic and research organizations, and government; formed to develop domestic and global demand for environmental products and services to enhance a clean and productive environment.
- National EBC now being organized. Western Governors, Oregon Environmental Technology Association, and EBC major initial sponsors (need federal recognition).
- Companion research, education and training institute. International Environmental Business and Technology Institute, Inc.

REMOVING OBSTACLES FOR GROWTH

- Envirotech Industry bears greatest responsibility to develop itself domestically and internationally.
- Most firms are small and medium sized.
- Changing budgetary, regulatory and enforcement policies discourage technology development.
- Lack of adequate financing.
- Absence of federal support is obstacle to export development. Industry is neglected.
- No federal support to take advantage of U.S. competitive advantage.

RECOMMENDED ACTIONS

- Partnership with industry.
- Establish a clear, workable, national policy for cooperation and coordination between industry and government.

- Emphasis is on export development.
- Goals are: 1) improvement in global environment, and 2) domestic economic growth. Strengthening the export of products and services and strengthening Envirotech Industry by: a) a strong, clear, national policy to achieve dual goals, and b) funding over limited period to assist industry and increase share of global market for environmental products and services.

IMPLEMENT RECENTLY ENACTED LEGISLATION

- Export Enhancement Act - implement quickly.
- Freedom Support Act.
- Enact new Environmental Products and Services Export Development Legislation.

ENACT NEW ENVIROTECH PRODUCTS AND SERVICES EXPORT DEVELOPMENT LEGISLATION

- Comprehensive statement of Federal policy to support export of environmental products and services.
- Process for industry, federal and state agencies, educational institutions, and public to devise an appropriate national strategy to promote the export of environmental products and services (go where the money is first).
- Link NAFTA actions like EBC-CONCAMIN to increase environmental capacity.
- Use U.S. and aid programs to developing countries to provide products and services.
- Low interest loans from export/import banks.
- Additional export enhancement (grants, subsidies, etc.).
- Modest funding for five years to support independent non-profit International Environmental Business and Technology Institute central and affiliate offices.

Study export opportunities.
 Create networks, U.N., etc. globally.
 Research industry capabilities.
 Assist industry regionally in export development - long term capacity building.
 Conduct programs of training and education with academic institutions and industry.
 Demonstration project early on.
 Create Volunteer Environmental Services Corps.

WHITE HOUSE ENVIROTECH CONFERENCE

- Early in 1993, a one day event.
- About one hundred fifty attendees. All industry sectors; federal, state, EBC, and academic.
- Administration announce actions.
- Implementation of Freedom Support and Export Enhancement Act.
- Announce new Envirotech legislation.

MARKET BASED INCENTIVES

- Support investment tax credits for Envirotech Industry.
- Clean Fuels Policy.

9720C

Environmental Business Council, Inc.

Exchange Place, 53 State Street, Suite 3400, Boston, MA 02109
Telephone: (617) 367-0282 • Fax: (617) 227-7566

Board of Directors

Donald L. Connors, Esq., Chairman
Bryant, Hall & Stewart

John (Jack) N. Driscoll, President
INCO Systems, Inc.

J. Mead Wyman, Treasurer
Lunbrecht & Quist Venture Partners

Anthony D. Cortese, Sc.D.
Tufts University

Ghazi Darkazalli, Ph.D.
Spire Corporation

Kathleen F. Hagan
Hagan and Company

Merna Hurd
Air & Water Technologies Corporation /
Metcalf & Eddy

Arthur N. Mabbett
Mabbett, & Associates, Inc.

John A. S. McGlennon
ERM-New England, Inc.

Daniel K. Moon
Longwood Environmental Management

W. Dennis Moran
Camp Dresser & McKee International,
Inc.

Sherry H. Penney, Ph.D.
University of Massachusetts

Dean I. Schaffer
Ernst & Young

Daniel S. Tedone
Pollution Control Technologies, Inc.

Stephen A. Wallis
Woodcliff Corporation

Executive Director

Diana S. Coates

December 17, 1992

FEDERAL EXPRESS

Mr. Gus Speth
Natural Resources
Office of the President-Elect
and Vice President-Elect
1120 Vermont Avenue, N.W.
Washington, DC 20270

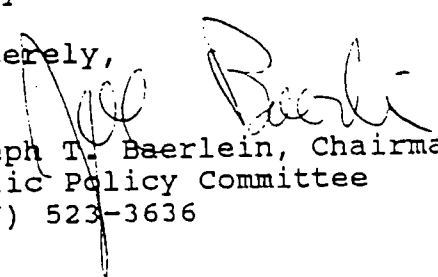
Dear Mr. Speth:

On behalf of the Environmental Business Council, I have enclosed for you and the Clinton-Gore Transition Team a discussion paper on how the new Administration could formulate environmental policy toward the goals of creating more jobs and environmental business opportunities.

As you can see from the enclosed material on the Environmental Business Council, we are the only environmental business association in the United States, and we believe we have a unique perspective on environmental concerns. We would be happy to meet with you at your convenience to discuss the material enclosed in the paper.

Thank you for your consideration.

Sincerely,


Joseph T. Baerlein, Chairman
Public Policy Committee
(617) 523-3636

JTB:jmb
Enclosure
c.c. Mark Gearan
Michael Whouley
0289Q

Environmental Business Council, Inc.

Exchange Place, 53 State Street, Suite 3400, Boston, MA 02109
Telephone: (617) 367-0282 • Fax: (617) 227-7566

Board of Directors

Donald L. Connors, Esq., Chairman
Choate, Hall & Stewart

John (Jack) N. Driscoll, President
HNU Systems, Inc.

G. Mead Wyman, Treasurer
Huntbrecht & Quist Venture Partners

Anthony D. Cortese, Sc.D.
Tufts University

Ghazi Darkazalli, Ph.D.
Spartan Corporation

Kathleen F. Hagan
Hagan and Company

Merna Hurd
Air & Water Technologies Corporation /
Metzalf & Eddy

Arthur N. Mabbett
Mabbett, & Associates, Inc.

John A. S. McGlennon
ERM-New England, Inc.

Daniel K. Moon
Longwood Environmental Management

W. Dennis Moran
Camp Dresser & McKee International,
Inc.

Sherry H. Penney, Ph.D.
University of Massachusetts

Dean I. Schaffer
Ernst & Young

Daniel S. Tedone
Pollution Control Technologies, Inc.

Stephen A. Wallis
Woodcliffe Corporation

Executive Director

Diana S. Coates

December 17, 1992

FEDERAL EXPRESS

Mr. Reed Hundt
Natural Resources
Office of the President-Elect
and Vice President-Elect
1120 Vermont Avenue, N.W.
Washington, DC 20270

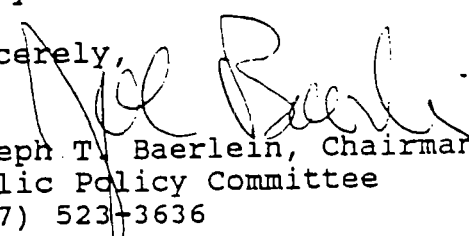
Dear Mr. Hundt:

On behalf of the Environmental Business Council, I have enclosed for you and the Clinton-Gore Transition Team a discussion paper on how the new Administration could formulate environmental policy toward the goals of creating more jobs and environmental business opportunities.

As you can see from the enclosed material on the Environmental Business Council, we are the only environmental business association in the United States, and we believe we have a unique perspective on environmental concerns. We would be happy to meet with you at your convenience to discuss the material enclosed in the paper.

Thank you for your consideration.

Sincerely,


Joseph T. Baerlein, Chairman
Public Policy Committee
(617) 523-3636

JTB:jmb
Enclosure
c.c. Mark Gearan
Michael Whouley
0289Q/2

Environmental Business Council, Inc.

Exchange Place, 53 State Street, Suite 3400, Boston, MA 02109
Telephone: (617) 367-0282 • Fax: (617) 227-7566

Board of Directors

Donald L. Connors, Esq., Chairman
Choate, Hall & Stewart

John (Jack) N. Driscoll, President
HNU Systems, Inc.

G. Mead Wyman, Treasurer
Hambrecht & Quist Venture Partners

Anthony D. Cortese, Sc.D.
Tufts University

Ghazi Darkazalli, Ph.D.
Spire Corporation

Kathleen F. Hagan
Hagan and Company

Merna Hurd
Air & Water Technologies Corporation /
Metcalf & Eddy

Arthur N. Mabbett
Mabbett, & Associates, Inc.

John A. S. McGlennon
ERM-New England, Inc.

Daniel K. Moon
Longwood Environmental Management

W. Dennis Moran
Camp Dresser & McKee International,
Inc.

Sherry H. Penney, Ph.D.
University of Massachusetts

Dean I. Schaffer
Ernst & Young

Daniel S. Tedone
Pollution Control Technologies, Inc.

Stephen A. Wallis
Woodcliffe Corporation

Executive Director

Diana S. Coates

DISCUSSION PAPER FOR THE CLINTON-GORE TRANSITION TEAM

"Creating Jobs Through The Environment"

A Blue Print for Domestic and International Business Opportunities in the Environment

Environmental Business Council

December 17, 1992

For further information
Contact: Joseph T. Baerlein,
Chairman,
Public Policy Committee
(617) 523-3636

I. Background on the Environmental Business Council

As the Clinton-Gore Transition Team focuses on the prescription for economic recovery, jobs and businesses created by cleaning up the environment can be a significant part of an economic recovery plan.

For the last two years, The Environmental Business Council (EBC), the first and only association of manufacturing and service companies in the United States promoting environmental businesses, has developed a blueprint for environmental job creation that can easily be implemented nationwide.

The Environmental Business Council was formed in November, 1990, to be the advocate in the national and international marketplace for envirotech services and products.

The Board of Directors includes principals and senior executives of companies from various industry sectors, representatives of educational institutions, and partners from law, accounting, venture capital and financial service firms. The Environmental Business Council has more than 160 member organizations representing all sectors of this diverse industry. Many of the businesses are both young and small, and most firms are from Massachusetts, although some come from other New England states and from Eastern Canada.

The EBC's stated mission is to foster the development of a competitive envirotech industry in the domestic and international marketplace, and to enhance and maintain a clean and productive environment.

The potential exists for similar associations or chapters in at least eight to ten regions across the country, where there are clusters of environmental businesses.

How does the EBC define the envirotech market? The envirotech industry in Massachusetts has, for a considerable period of time, existed in relative obscurity. There exists here a high concentration of businesses, providing goods and services which protect and monitor the quality of the human environment, assuring clean air and water, offering and managing remedial services in cleaning up contaminated property, and to manage the environmental affairs of business and other public and private organizations. Massachusetts possesses advantages such as our cluster of outstanding world class universities, vigorous environmental regulatory policies and enforcement, and an existing base of sophisticated high-technology manufacturing and environmental service companies. Together with highly qualified professionals and a highly-skilled labor force, the Commonwealth possesses a competitive advantage in a rapidly expanding global marketplace.

The Envirotech Industry includes both manufacturing and service companies. Within these two main groups, the manufacturing sector includes: environmental equipment, such as air and water monitoring and cleaning devices, marine electronics and technology products, energy equipment, including photovoltaic cells, and consumer and industrial products, such as recycled packaging goods.

The service sector includes analytical services, such as laboratory or on-site testing facilities, energy or energy conservation consulting services, and professional and support services including law, accounting, financial and other business services. Finally, operational services, such as solid and hazardous waste treatment, storage, transportation and disposal, are within the service sector. Educational institutions are an integral part of the industry and provide a vital source of personnel and research for the successful development of its various sectors.

Another and logical way of dividing this diverse industry into understandable sectors is provided by the Environmental Business Journal, a monthly trade market journal, which offers strategic information and advice for the industry. It segments the industry as follows; Analytical Services, Solid Waste Management, Hazardous Waste Management, Asbestos Abatement, Water Infrastructure, Water Utilities, Environmental Consulting, Resource Recovery, Instrument Manufacturing, Air Pollution Control, Waste Management Equipment, Environmental Energy Sources, Diversified Companies and Conglomerates.

The Envirotech industry is already a significant factor in the regional economy, and it is growing rapidly in importance. In August 1991, in cooperation with the EBC, a survey of more than 1,300 environmental and energy companies was conducted by the Massachusetts Executive Offices of Economic and Environmental Affairs for the purpose of better understanding

the industry and its contribution to the state's economy. Four hundred and fifty-two companies responded. From that study, the EBC learned that approximately 30,000 people are employed in the Envirotech Industry in Massachusetts alone.

The environmental field is regulation driven. The US domestic environmental industry sector is a huge market that has been created by the adoption, since the late 1960s, of federal and state legislation requiring, (a) the assessment of environmental impacts of government sponsored or permitted projects, and (b) comprehensive programs in (i) air, water, and coastal zone management; (ii) a occupational health and safety obligation of employers and the community's right to know programs; (iii) in hazardous waste, Superfund and contaminated site remediation, and (iv) for natural resource protection including wetlands, endangered species and other critical environmental resources. According to figures cited by the EPA, the domestic environmental business sector generates sales of more than \$100 billion annually.

In its mid-1992 Background Paper, "Trade and Environment, Conflicts and Opportunities," the Office of Technology Assessment reported that the Organization for Economic Co-operation and Development (OECD) estimates that the Worldwide environmental market was \$200 billion in 1990 and that it will grow at a 5.5 percent rate to \$300 billion by 2000. OECD's definition of environmental goods and services includes only end-of-the-pipe equipment, and thus it excludes training,

education, technologies incorporated into production processes, and "green" consumer products, i.e, those which are more energy efficient, use recycled material, etc.

The OTA Background Paper states, and the Environmental Business Council agrees, that there will be greater opportunities for environmental goods and services in international trade as environmental standards and demands grow in stringency in both the developed and developing nations. Mexico's market, for example, will increase 15% annually during the early 1990s in part because of the impact of the North American Free Trade Agreement. Taiwan will be spending \$105 billion over the next 10 years for environmental protection, with pollution control equipment imports due to increase 20 percent annually. Other similar projections of growth can be made for other nations and regions of the World, including in particular, the former Soviet Republics, where US and other nations are making major commitments to environmental restoration in former Soviet region.

There are existing mechanisms within the Commerce Department, and financing institutions like the U.S. Agency for International Development, Export-Import Bank, that work to promote exports. However, these frequently do not have the ability to finance projects without obvious revenue streams. Perhaps what could be done is a coordinating committee in each

of those agencies charged with assisting a specific industry, as opposed to a country by country approach. This would overlay on the existing country by country structure now in place.

Furthermore, these and other market size estimates the EBC has examined understate the market because they do not consider initiatives such as Agenda 21, the plan for achieving Sustainable Development adopted at the Earth Summit. As Vice President-elect Gore knows only too well, there will be new environmental policies, laws, government and industry initiatives that will sharply increase the demand for environmental goods and services. Furthermore, the developed nations are shifting their development assistance programs away from defense and large capital projects to commitments that include protection of the human environment.

II. Federal Government Structure for Expansion of Environmental Businesses and Jobs.

The likelihood is that the Clinton-Gore Administration will place a priority on the environment. The EBC believes that the new Administration must do more than place the "environmental" advocacy in the Environmental Protection Agency. Otherwise, a singular focus on regulations and enforcement will continue the perception that environmental policy is antagonistic to job creation and business expansion here and abroad.

Without undertaking the time consuming and politically charged mission of placing all environmental agencies and responsibilities under one secretariat, the new Administration

must somehow assemble all environmental responsibilities, both regulatory and job creating, under one roof.

As discussed in a recent memorandum to the President-elect from the Carnegie Endowment for International Peace's Institute for International Economics, "there is no single locus within the Executive Branch for environmental issues in government, or for international environmental issues in particular." In endorsing the logic of the Carnegie Report, the Environmental Business Council also recognizes that environmental policy is made through the actions of the Department of the Interior, the National Oceanic and Atmospheric Administration in the Commerce Department, the National Aeronautics and Space Agency (NASA) in the Transportation Department, the Council of Environmental Quality (CEQ) in the White House, the Office of the Trade Representative in the State Department, the Bureau of Oceans and International Environment and Scientific Affairs and the United Nations in the State Department, and the Treasury Department through its responsibilities for the World Bank, the International Monetary Fund, and the regional development banks.

Without offering a definitive recommendation on how to better coordinate these various agencies, the Environmental Business Council recommends that, as a first step, the Environmental Protection Agency be elevated to Cabinet level rank, giving Secretary-Designate Browner an equal voice with her Cabinet colleagues.

Concerning the coordination of environmental regulatory and job creating policies, perhaps the office of the Vice President could bring the necessary focus to environmental policy. This would negate the need for an actual government reorganization.

Other recommendations on federal government structure include the following:

A tribunal consisting of the Secretaries of Commerce, Energy, EPA and Interior and the Undersecretaries of State and Treasury working with the Vice President on developing the U.S. policy on environmental economic initiatives.

The CEQ should be given a redefined mission within the Office of the President, starting with a name change that reflects the state of the environment in the 1990s. The Council for Environmental Business & Jobs (CEBJ) could function as both a coordinating body for the Vice President and also as a U.S. equivalent of MITI (Japanese Trade Ministry for environmental products).

CEBJ coordination would be conducted on a task force basis and exercised on such issues as Defense Conversion (coordinating EPA, DOE, DOD, the Armed Services), Energy Conservation (DOE, EPA, DOI), and Enhancing Export of Environmental Products/Expertise (EPA, DOD, NASA, Commerce, State).

As an advocate, the Council would assist in the development and brokering of U.S. environmental technology abroad. The role could involve identification and marketing of existing technologies by working with private industry, and could also

involve directing U.S. government research, funding private research and/or offering other assistance to test newly developing technologies (i.e., per the Superfund Innovative Technology Evaluation program). This option could be broadened by actually transferring certain R&D functions from EPA and DOE to CEBJ.

The new Administration should also clarify the role of the Office of Management and Budget in EPA rule making and policy formation. The role of OMB in the Bush Administration preempted the EPA on a variety of issues, including the drafting of environmental regulations. Delaying regulations usually makes it worse for all businesses, since capital expenditures of business and industry implementation necessitate an orderly plan and process that business can understand and plan for.

The EPA should also create a Bureau of Environmental Statistics similar to the effort now done in the Department of Energy. Not only could this bureau provide timely information on environmental regulatory issues, but it could also be the catalyst for identifying job and business opportunities for envirotech businesses.

EPA should also be given an expanded role in emerging technology development, since the production and use of energy are central to environmental concerns. Energy processes are the single largest source of air pollution as well as major sources of solid waste, toxic substances, and water pollution. One of the principal objectives of the Department of Energy's (DOE)

National Energy Plan, raises the issue of the mitigation of the environmental impacts of energy production. This issue stands on par with other objectives, such as insuring the supply of energy at low costs and limiting U.S. reliance on foreign sources of energy. However, while these are important objectives, for the DOE, they often conflict with the environmental objectives of EPA.

DOE and EPA will always view some energy issues differently because of the occasional conflicts between the objectives of clean energy and cheap energy. One unfortunate consequence of this failure to work together has been too little emphasis on research in pollution mitigation and environmental clean-up. While EPA has substantial laboratory capabilities, these are largely directed toward the science of understanding the mechanisms of pollution and the resultant effects, rather than developing new environmental technologies or clean energy processes. These directives lie within the purview of the Department of Energy, which controls 17 laboratories, representing some of the finest scientific and engineering talent in the country.

At the very least, The Environmental Business Council believes that the new Administration should provide EPA with a strong role in directing work at the DOE laboratories and in setting the lab's research objectives. Two options to accomplish this recommendation are:

1) Several of the laboratories could be moved from the Department of Energy to the EPA, giving EPA complete control over their operation and research.

2) The laboratories could remain under DOE administrative control, but the funding of environmental research projects could be routed through the EPA, giving the EPA control over the direction and level of work.

Regardless of the mechanism by which it is achieved, deployment of the national laboratories under EPA leadership would also serve to advance the economic objectives of the Clinton-Gore Administration, by advancing development of U.S. technology that environmental businesses could sell to international markets.

III. Specific Recommendations on Environmental Policies and Programs.

As Michael Porter of the Harvard Business School stated at the Economic Conference in Little Rock, The United States' competitive successes will be concentrated in particular industries and groups of industries called clusters. The envirotech clusters offer potential for domestic job creation, domestic natural resource protection, and international envirotech job creation and natural resource protection opportunities.

Listed below are suggested recommendations in those three areas.

A. Domestic Job Creation

1. Include environmental projects - water, wastewater, hazardous waste remediation, in addition to transportation projects, as eligible for funding from the Administration's infrastructure economic stimulant package. The funding will assist in the support of employment in the environmental business sector, as well as the construction industry.

Establish criteria for funding priorities including the following factors:

- Construction projects which can be initiated within 120 days.
- Projects with direct benefit to environmental quality;
- Positive impacts for communities with major rate shock issues.

2. Make bank financing more readily available for the expansion of the environmental services sector.

In a survey of 15 EBC member environmental service companies in the spring of 1992, each company was found to have many things in common: all were growing, all were profitable and none were borrowing from the banks. Each company was hesitant to add any new jobs, although there was the business to justify it. They were concerned with short term cash flow, since they could not borrow money from banks which do not like to lend to service companies. Their comments about this

industry are "How do we know the job is 90% finished when it is 90% billed?" They feel that the service companies do not have enough hard assets or equity to justify the loans.

In addition, overhaul of federal tax policy should include providing tax incentives to banks to lend to small companies. Expanded loan programs through the Small Business Administration and possible pilot programs to provide venture capital to environmental service businesses are other ideas for helping to create jobs. The federal government must also do a better job in helping environmental companies export goods and services, especially since the passage of the Freedom Support Act that creates \$410 billion worth of business opportunities for United States companies.

B. Domestic Natural Resource Protection

Current hazardous waste clean-up programs are often lost-ineffective, divesting public and private funds from higher priority problem areas. Risk assessments are considered by many to be extremely conservative and based on unrealistic assumptions of exposure and ultimate land use. The following steps are recommended:

- Address the highest risk sites first.
- Accelerate remediation activities at sites to reduce short term acute risks, while studying long term solutions to chronic risks.

- Evaluate the consolidation of contaminated site remediations currently administered under CERCLA, UST, RCRA Corrective Actions, and Private Cleanups into one statutory and regulatory scheme.

Establish a strong leadership role in promoting an effective and sound solid waste program. Market based approaches i.e. virgin material charges, recycling credit programs and deposit-refund programs, should be supported to ensure available markets for reused and recycled products.

Market-based incentives, if properly applied, can achieve the same aggregate level of control, but with greater economic efficiency. However, current knowledge and support within federal and state regulatory agencies is minimal. As a priority, EPA should be aggressively developing emission banking programs in response to Title I of the Clean Air Act. This initiative should promote cross-state trading for ozone non-attainment purposes and promoting emissions trading rules, which encourage bubbles. If EPA does not act aggressively soon, rules will be developed in a variety of states to promote a market based approach. But because of excessively restrictive provisions, these rules actually moot trading. The following steps should be undertaken:

- EPA should put together a core set of materials and bring canned workshops to each region. A team of experts should be available to provide timely outreach to states needing to develop and implement air credit

trading rules during the next nine months. EPA should also utilize the knowledge of an industry-consulting advising group during the process.

A pilot project should be considered in the Clean Water Program. A good opportunity for use of market based approach is for dealing with emissions and effluent going into the Great Lakes from both the US and Canada.

With respect to other market based concepts, like performance bonding, deposit refund systems, etc., EPA should document these approaches, develop a taxonomy of these approaches and incentivize regional, and program staff and state and local governments to develop such programs. Such incentives can be through agency performance standards and through grant to states and localities.

Government policies and regulations should be established to promote the privatization of environmental projects i.e., wastewater treatment systems.

C. International Opportunities

Over time, the Rio initiatives and their progeny will lead to new environmental regulations and a favorable climate for environmental investments. This will result in increased business for the U.S. envirotech industry if the industry is able to understand and take advantage of the global opportunity that lies ahead of us.

A consortium for the global environment must be quickly formed by the envirotech industry, federal and state governments, educational institutions, and other environmental organizations providing services in law, career planning and corporate environmental management. This compact, funded by public and private resources, will connect with relevant national and international environmental interests, including the United Nations. In addition to U.S. environmental policy initiatives, it will allow America to become the world leader in implementing the Rio initiatives, thereby building the U.S. envirotech industry and creating good jobs.

The elements of this strategy are clear. First, the federal government should immediately redirect a portion of our public investment into environmental and energy technology and its transfer for the benefit of us and the world. Legislation related to this purpose was recently filed by U.S. Sen. Barbara Mikulski (D-Md.).

Second, this undertaking must have sufficient resources to perform the research necessary to understand and, where appropriate, to advise others implementing the emerging international environmental regime. It should be encouraged, if requested, to advise nations and other interests about our considerable national experience in the implementation of environmental law and the practice of environmental management.

A third element is that the strategy should concern itself with the necessary economic policy - that is, the development of the global market in environmental and energy goods and services. U. S. trade policy should address the need for global harmonization of environmental standards. Both technical product standards and standards to protect the environment are important factors in the facilitation of international trade. Standards can be an impediment to free and fair trade when used as invisible trade barriers by foreign competition.

The Office of Technology Assessment in its March, 1992 report, "Global Standards - Building Blocks for the Future," warned that "the United States has tended to disregard or underestimate other governments' efforts to use standards as marketing devices to expand trading opportunities. This short-sighted approach could undermine U.S. competitiveness. If not addressed quickly, the outcome could be irreversible."

Finally, the government should assist private industry, nonprofit organizations and educational institutions in providing both environmental technology and international management training in order to provide U.S. environmental firms with the skills required to compete successfully in the global marketplace.

If we do these things, we will have a comprehensive global strategy to assist the world in achieving environmental protection and sustainable development. This strategy will also allow us a tremendous competitive advantage which unfortunately, under current circumstances, we have not been able to use effectively, either in the interest of global environmental health or in our own economic interests.

0273Q

ENVIRONMENTAL INDUSTRY GROWTH: 1989-91

Revenue & Growth (\$ Billions)

<u>INDUSTRY SEGMENT</u>	<u>'88-'89</u>		<u>'89-'90</u>		<u>'90-'91</u>	
	<u>1989</u>	<u>Growth</u>	<u>1990</u>	<u>Growth</u>	<u>1991</u>	<u>Growth</u>
1. Analytical Services	1.6	23%	1.7	6%	1.7	1%
2. Solid Waste Mgmt.	23.5	14%	26.1	11%	27.4	5%
3. Haz. Waste Mgmt.	12.1	22%	13.3	10%	13.7	3%
4. Asbestos Abatement	3.8	27%	4.0	5%	3.0	-24%
5. Water Infrastructure	11.7	7%	12.1	3%	12.5	3%
6. Water Utilities	11.1	6%	11.5	4%	11.8	2%
7. Eng./Consulting	10.2	26%	12.2	20%	13.4	10%
8. Resource Recovery	14.8	23%	17.2	16%	15.8	-8%
9. Instrument Mfg.	1.5	25%	1.7	14%	1.8	4%
10. Air Pollution Control	5.3	-4%	5.4	2%	5.3	-1%
11. Waste Mgmt. Equip.	9.8	9%	10.4	6%	11.0	6%
12. Envmtl. Energy	1.5	25%	1.8	20%	2.0	9%

INDUSTRY GROWTH PROJECTIONS: 1992-96

Revenue & Growth (\$ Billions)
Avg. Ann.

INDUSTRY SEGMENT	Growth	1991	1992	1993	1994	1995	1996
1. Analytical Services	6%	1.7	1.8	2.0	2.1	2.2	2.3
2. Solid Waste Mgmt.	5%	27.4	28.5	30.8	32.6	33.9	35.3
3. Haz. Waste Mgmt.	6%	13.7	14.3	15.6	16.7	17.5	18.4
4. Asbestos Abatement	1%	3.0	3.1	3.2	3.2	3.2	3.1
5. Water Infrastructure	4%	12.5	13.1	13.8	14.5	15.0	15.5
6. Water Utilities	2%	11.8	12.0	12.3	12.5	12.7	13.0
7. Eng./Consulting	9%	13.4	14.3	16.4	18.0	19.4	20.6
8. Resource Recovery	10%	15.8	16.7	18.7	20.8	23.0	25.3
9. Instrument Mfg.	6%	1.8	1.9	2.1	2.3	2.4	2.5
10. Air Pollution Control	13%	5.3	5.8	6.7	7.7	8.8	9.9
11. Waste Mgmt. Equip.	7%	11.0	11.6	12.7	13.7	14.6	15.1
12. Envmtl. Energy	7%	2.0	2.1	2.2	2.4	2.6	2.8+

0273Q

*file file of environmental
Powers Committee*
CHOATE, HALL & STEWART

EXCHANGE PLACE

53 STATE STREET

BOSTON, MASSACHUSETTS 02109-2891

TELEPHONE (617) 227-5020

FACSIMILE (617) 227-7566

TELEX 49615860

December 29, 1992

VIA FACSIMILE

Ms. Katie McGinty
Legislative Assistant
Vice President-Elect Albert Gore's Office
United States Senate
393 Russell Office Building
Washington, D.C. 20510

Dear Katie:

We got such a lift from our meeting with you before Christmas. What a wonderful opportunity we have now to connect the United States Envirotech Industry to the global market for environmental goods and services.

Accompanying this letter, as you requested, is a draft of the letter of introduction for Maurice Strong which we would be pleased if you would prepare. I would like to connect our U.S. Envirotech Industry to his new Planet Earth Council. A copy of my resume which you may want to use in the letter to Mr. Strong and for the nomination letter to U.N. Secretary General Boutros Ghali for the Advisory Committee to the new Sustainable Development Commission is enclosed.

On Monday, January 4th, I will have the Envirotech Industry Strategy Proposal you requested, the inaugural address language and at least the outline of proposed legislation. We will incorporate some NAFTA suggestions in the memo, but I will follow up on that subject with you in the near future. I would like if possible to deliver the memo to you in person. Joan Bondareff is calling your office for a time that would be convenient for you. Congressman Gerry Studds may want to join

Ms. Katie McGinty
December 29, 1992
Page 2

us. He has been an incredible help and supporter in this entire enterprise.

After meeting with you and the Transition Office on Monday, I am going to Denver for meetings with the Western Governors' Association staff and other environmental industry people from the West and Northwest. These meetings are designed to plan how to most effectively bring envirotech firms from various regions of the country together so that we can construct an effective long term partnership with the federal and our state governments to take advantage of our competitive advantage in the envirotech field.

I look forward to seeing you next week. If there is any other assistance we can make available to you, please let me know.

Best regards.

Sincerely,

A handwritten signature in cursive script, appearing to read "Donald L. Connors".

Donald L. Connors

DLC/sb
Enclosure

9575C

cc: Joan Bondareff

DRAFT LETTER

12/29/92 TO MAURICE STRONG

Dear :

The purpose of this letter is to introduce you to Donald L. Connors, of Boston, Massachusetts. I enclose a copy of Mr. Connors' resume.

Mr. Connors is a prominent environmental lawyer with extensive experience in the enviro-technology industry. He is also the founder of the Environmental Business Council, Inc. ("EBC"), a consortium of business firms, institutions of higher education, and non-profit organizations, formed for the purpose of assisting the transfer of environmental goods and services from the United States to other nations of the world principally through technology cooperation. The EBC has a committee on Eastern Europe and the Former Soviet Republics which is hosted a conference on "Building Globally" and has an exchange program for Central European environmental entrepreneurs. The EBC has already entered into an historic agreement with the Mexican industry association, CONCAMIN, to provide assistance to Mexico on compliance and capacity building with its environmental laws.

The Planet Earth Council would benefit from the experience of Mr. Connors and his colleagues in the envirotech industry. Mr. Connors attended the Earth Summit on behalf of the EBC and he has traveled in many areas of the world in connection with environmental law policy and the development of the enviro-technology industry globally.

If you have any questions, do not hesitate to call me.

With kind regards.

Sincerely,

9584C

DRAFT

December 1992

Donald L. Connors, Esquire AICP

Choate, Hall & Stewart
Exchange Place, 53 State Street
Boston, MA 02109

617/227-5020 (B)
617-227-7566 (Fax)
617/934-5533 (R)

EMPLOYMENT

Partner and Chairman of the Choate, Hall & Stewart Land Use and Environmental Law Group

ADMISSION TO PRACTICE

Supreme Judicial Court, Massachusetts
United States District Court, District of Massachusetts
United States Court of Appeals for the First Circuit
Member, American Institute of Certified Planners

EDUCATION

Boston College, Boston, Massachusetts, B.S. 1957 (cum laude)
Suffolk University Law School, Boston, Massachusetts, J.D. 1967
Academic Honors: Beta Gamma Sigma, Alpha Sigma Nu, Cross and Crown Honor Societies

ACADEMIC POSITIONS

Massachusetts Continuing Legal Education Inc.
Co-chairman, Environmental Law Curriculum Advisory Committee, 1990 to present

Harvard University Graduate School of Design
Lecturer, Professional Development Courses in Urban Waterfront Development-Land Use and Environmental Law and Development Regulation-Innovations in Planning and Zoning, Etc. - 1978 to 1990

University of Massachusetts, Boston, Massachusetts
Member, Marine Sciences Advisory Board - 1985 to -
Co-chair, Coastal Center Advisory Board - 1991 to -
Member, University of Massachusetts at Boston Campus Council - 1992 to -

University of Massachusetts, Amherst, Massachusetts -
Adjunct Lecturer in Regional Planning - 1989 to -

Massachusetts Institute of Technology -
Member, Sea Grant College State Industry Advisory Board -
1972 to -

Lincoln Institute of Land Policy, Cambridge, Massachusetts -
Member of Faculty; 1985 to -

PROFESSIONAL AFFILIATIONS

Listed in Who's Who in America 1991, 1992
Boston Bar Association, Environmental Law Section
Massachusetts Bar Association
American Bar Association, Member, Sections on Natural Resource
Law and Urban, State and Local Government Law
American Arbitration Association's Mediation Panel
Founding Director and Chairman of the Board, Environmental
Business Council Inc.
Founding Director and Chairman of the Board, International
Environmental Technology Institute, Inc.
Associated Industries of Massachusetts, Environmental Law Advisor
Founding Director International Coastal and Ocean Organization
Inc.
Founding Director and Chairman of the Board, The Growth
Management Institute, Inc., Washington, D.C.
American Planning Association, Member, Land Use Law Section, and
New England Chapter
Conservation Law Foundation of New England, Director 1976-1991,
Chairman 1976-1980, Treasurer 1980
International Center for the Preservation of Artistic and
Historic Cities, University of Florence, Florence, Italy,
Member Lawyers Advisory Panel

Member Society of Professionals in Dispute Resolution (SPIDR)

RECENT ARTICLES AND PUBLICATIONS

State and Regional Initiatives for Managing Development,
Douglas R. Porter Ed., Urban Land Institute, Washington, D.C.
1992

The Public Trust Doctrine in Coastal Resource Management with
John H. Archer, Esquire, Robert E. Bowen, Ph.D., (forthcoming,
1993).

Putting The Public Trust Doctrine to Work. Coastal States
Organization, Washington, D.C. 1991, Co-Author with John H.
Archer, Robert Bowen, Ph.D., Kenneth Laurence, Esq.

"Exactions and Impact Fees - A White Paper" prepared for the
Urban Land Institute & National Association of Industrial and
Office Parks, Washington, D.C. (Monograph 104), 1987

"The Lucas Case. Narrower than Property - Rights Advocates Hoped" Massachusetts Landlaw. Landletter, Boston, MA. Volume 2, Fall 1992.

"Legal Issues in Negotiated Development" with Jerold Kayden, prepared for the 1985-1986 Seminar on Negotiated Development sponsored by the Lincoln Institute of Land Policy, Cambridge, Massachusetts

Monograph "Massachusetts Superfund Law", Harvard Graduate School of Design, 1984

Comment "The Public Trust Doctrine: Its Impact Upon Land Development" published by Urban Land Institute, March 1985

Monograph "The Public Trust Doctrine: A Primer for the 1980's" with Michael E. High, Lincoln Institute of Land Policy, 1984, revised 1985

"The Expanding Circle of Exactions: From Dedication to Linkage" with Michael E. High, Duke Law Journal, Law and Contemporary Social Problems, (Vol. 50, Winter 1987, No. 1)

"Paying the Piper: What Can Local Governments Require as a Condition of Development Approval?" with Carolyn R. Meacham, Institute on Planning, Zoning and Eminent Domain, Southwestern Legal Foundation, Dallas, Texas 1986.

"The Public Trust Doctrine: Does the Coast Really Belong to Everyone?" American Law Institute-American Bar Association Conference on Environmental Law, 1986

"Managing the Environmental Inspection" Industry Magazine, Associated Industries of Massachusetts, March 1986

Massachusetts Land Use and Environmental Law Update 1985-1986 Conference on Growth and Change, University of Massachusetts, November, 1986

Monograph "Plugging the Holes in Environmental Enforcement. The Massachusetts Administrative Penalties Act", with Michael Samuels, for the Associated Industries of Massachusetts, 1986.

Plan for Success: The Challenge of Waterfront Development. Proceedings of the 1986 Symposium on Waterfront Planning and Development Edited by A. Ruth Fitzgerald, American Society of Civil Engineers - 1986.

"Legal Status of Tidal Flats in Massachusetts". The Sounds Conservancy, Inc., July, 1990.

PUBLIC POLICY BOARDS AND APPOINTMENTS

Urban Land Institute, Washington, D.C. - Chairman Policy Forum on State and Regional Planning; Member Policy Forum on Development Agreements.

Governor's Advisory Committee on International Trade, Appointed Member 1992.

Governor's Appointee - Special Commission on Balanced Growth and Development, Chap. 199, Mass. St 1987

Board of Editors - Land Use Law and Zoning Digest, American Planning Association, Member 1980 to 1991

Governor's Task Force on Coastal Resources, Chairman Law and Management Systems Committee, 1973-1978

Massachusetts Office of State Planning - Citizen Advisory Board, 1976-1980

Chair: Environment Committee - The Challenge to Leadership Initiative, Boston 1992

Center for Rural Massachusetts, University of Massachusetts - Board Member 1985 to present

"Blue Ribbon" Advisory Committees, Massachusetts Executive Office of Environmental Affairs or Department of Environmental Protection - Administrative Penalties Act; Waterways and Public Trust Doctrine; Conservation Restriction Program; Solid Waste Program; Counsel, Agricultural Lands Preservation Program; Massachusetts Special Commission on State Growth Policy

Member Advisory Committee to Massachusetts Aeronautics Commission Study of Second Major Airport 1990 -

Board of Editors - New England Landscape Journal, University of Massachusetts, Amherst, Massachusetts, 1987 to present

Steering Committee - Greater Boston Chamber of Commerce - Boston Society of Architects "Boston 2000" Land Use Policy Study, Member 1983 to 1986

Steering Committee - Boston Society of Architects, Boston "Visions" - National Design Competition for Boston, Member 1988 to 1989

LECTURES AND PRESENTATIONS

Accredited Delegate, United Nations Conference on the Environment and Development; Rio de Janeiro, Brazil, June 1992,

Accredited Delegate, The Global Forum-Rio de Janeiro, Brazil, June 1992.

Speaker, International Conference on Sustainable Development in Tropical Forests; Manaus, Brazil, June 1992.

Keynote Speaker, Opportunities in the New Environmental Economy - Oregon Environmental Technology Association; Eugene Oregon, December, 1992.

Speaker, Industry and The Environment, XXVIII Congreso Latino-Americano de Industriales Conference - CONCAMIN: Confederation of Industrial Companies of the United States and Mexico; Mexico City, Mexico, November 1992.

Alaska Economic Summit - Office of the Juneau Governor, Walter J. Hickel; Anchorage, Alaska, November 1992.

Speaker, The Use of the Public Trust Doctrine as a Management Tool for Public and Private Lands - The Government Law Center, Albany Law School; Albany, New York, December, 1992.

International Conference on Contamination of the Black Sea, Varna, Bulgaria, November 1991 - Chair legal issues task force.

Speaker, International Symposium On The Coastal Zone; Kanagawa, Japan, October, 1990

World Conference on Land Policy, London, England, Panel Chairman - Development Exactions, 1987

Faculty, American Bar Association/Prentice Hall Conference - Takings - Section 1983 and Land Use Disputes, New York - Takings and Environmental Protection and Coastal Zone Protection, 1988

Conference: Public Trust Doctrine in Land Use Policy, Lincoln Institute of Land Policy, Cambridge, Massachusetts, Chairman 1985

American Law Institute/American Bar Association Annual National Courses of Study in Environmental Law and in Land Use Law and Development Regulation 1978-1990, Faculty Member: Lectures and Legal Monographs in: Agricultural Zoning and Preferential Tax Programs; Siting of Hazardous Waste Facilities; Valid Age Discrimination in Zoning; Development Exactions and Impact Fees; State and Regional Land Use Planning an Emerging Trend; The

Public Trust Doctrine; Wetlands Regulations; Land Development Agreements; Zoning by Transportation Impacts; Public Private Transportation Management Strategies; On and Off Site Mitigation of Development Projects; Mediation and Alternative Dispute Resolution

Urban Land Institute - Conferences on Development Exactions and Impact Fees, Dallas, Texas, Washington, D.C., Atlanta, Georgia, Los Angeles, California, 1987 - 1988, Faculty Member

National Association of Industrial and Office Parks Conference on Development Exactions, Dallas, Texas, 1987

American Bar Association-National Institute on Redevelopment and Growth Management, Miami, Florida, 1984, Faculty Member

National Real Estate Development Center; Conference on Winning Land Regulation Disputes, Washington, D.C., 1987; Waterfront Development, Florida, 1988, Boston, 1988

Massachusetts Continuing Legal Education, Inc. Faculty Chairman of Program on Advanced Environmental Law, 1988 to present

Center for Real Estate Development, New York University, Waterfront Development Seminar, New York, 1985 and 1987; Panel Chairman, Land Use Regulation Steering Committee 1989; programs on the Future of Land Use and Development Regulation; Massachusetts Continuing Legal Education, Inc. Seminars on Environmental Law 1987-1988 and The Takings Issue 1988, Conference Chairman

American Planning Association, Chicago, Illinois: Bettemann Symposium Lecturer, Regional Land Use Regulation 1981, Mediation in Land Use Planning, 1982, 1986; Land Use Law for Lawyers and Planners 1987-1992; Faculty Member;

Fourth Symposium on Coastal and Ocean Management, Baltimore, Maryland, Lecture; The Public Trust Doctrine, 1985, Lecturer, CZ '89 Charlestown, S.C. - Public Trust Doctrine

Western Public Interest Law Conference, University of Oregon School of Law, Eugene, Oregon, 1986, Lecture: The Public Trust Doctrine

Coastal State Organization Regional Symposies, 1990, Chairman; The Public Trust Doctrine in Coastal Management, Seattle, Washington, New Orleans, Louisiana

CIVIC ACTIVITIES

The Trustees of Reservations, Manchester, Mass. - Trustee
1983-6; 1989-.

WGBH Educational Foundation Community Advisory Board, Cambridge,
Massachusetts, Chairman 1979-1982; Board of Overseers, 1986 to
1990

The New England Aquarium, Boston, Massachusetts, Trustee
1976-1979

Founding Member and Director - 1,000 Friends of Massachusetts

Founding Member and Director - The Cape Cod Center for
Sustainable Development and The Environment

Member, Regional Advisory Board, The Trust for Public Lands,
1992 to -

Town of Duxbury, Massachusetts Board of Appeals member
1973-1974; Land Use Study Committee member, 1971-1974; Duxbury
Beach Study Committee, Chairman 1986-1988

12/92
0628c

November, 1992

Biographical Statement

Donald L. Connors, Esquire
Chairman
Environmental Business Council, Inc.
53 State Street
Boston, MA 02109

Donald L. Connors, founding Chairman of the Board of Directors of the Environmental Business Council, Inc., has been an environmental professional for more than twenty-five years. Mr. Connors specializes in Environmental law and in representing Environmental Businesses in the domestic and international markets.

Mr. Connors is a Senior Partner in the Boston, Massachusetts law firm Choate, Hall & Stewart where he is Chairman of the Land Use and Environmental Law Practice Group. He has been a pioneer in the emerging field of environmental law since the late nineteen sixties. He has been engaged in all areas of environmental law, representing clients in the public and private sectors. He has assisted industry clients in matters relating to natural resource protection, corporate environmental management, air and water pollution, solid and

hazardous waste, and occupational health and safety. He has represented Governments in such matters as wetlands and natural resource protection, coastal and ocean law and in the development and implementation of new environmental legal programs for the protection and enhancement of the human environment.

He has lectured and consulted extensively about environmental law and its implementation in many areas of the world in the recent past in the United States, England, Japan, China, Hungary, Bulgaria and Brazil.

He was an accredited non-governmental organization delegate to the United Nations Conference on Environment and Development "UNCED" or "Earth Summit" held in Rio de Janeiro in June, 1992.

In addition to his professional activities, he has authored many articles and books on environmental law and environmental management. He serves as a member of the Board of Directors of many national and international environmental law and business organizations.

7104C

*file - Environmental
Business Council*

Remarks of Donald L. Connors, Esquire
Founding Chairman of the Board of Directors
Environmental Business Council, Inc.
Boston, Massachusetts

to

XXVIII Congreso Latino-Americano de Industriales

Mexico City, Mexico

November 17, 1992

Thank you for the opportunity to participate with you in this important Congress and exposition. I am particularly pleased for the opportunity to share with you some thoughts about how my organization, the Environmental Business Council, which I serve as the Chairman of the Board of Directors, might collaborate with Latin American industry, to work with and transfer our skill and experience in environmental management, environmental products and services through the business-to-business relationships that we know as Technology Cooperation. I will describe the agreement of cooperation we entered into earlier this year with CONCAMIN. Following a review of recent developments in industrial environmental management, I will offer some thoughts on the future course of environmental issues that will be stimulated by the actions taken at the Earth Summit held earlier this year in Rio de Janeiro and their impact on business organizations. Finally, I wish to invite industry throughout the hemisphere to

collaborate with the Environmental Business Council so that together we can assist our nations in achieving sustainable development.

The Environmental Business Council as we call the association is a non-government, nonprofit business association incorporated under the laws of the United States. Our members are companies that manufacture environmental and energy products, provide environmental consulting services to industry, government and other organizations in the public and private sectors, academic institutions, environmental research institutes, and government and non-government organizations engaged in environmental law, environmental management, environmental career development and economic development. We call this cluster of public and private organizations the "Envirotech Industry." Our mission is to bring our member organizations together with public and private sector organizations throughout the world, in order to promote resource protection and modern environmental management for industry and government. We expect to achieve our goals in large measure through joint business to business development between the public and private sectors in our respective countries.

For a considerable period of time the Envirotech Industry has existed in relative obscurity. There exists in our region of Northeastern United States a high concentration of businesses providing goods and services which protect and monitor the

quality of the human environment, assure clean air and water, provide remedial services in cleaning up contaminated property. It also assists executives in the management of the environmental affairs of business and other organizations. We also have a cluster of outstanding world-class universities, many of which people at this Congress have attended. Our experience with vigorous environmental regulatory policies and enforcement, an existing base of sophisticated high-technology manufacturing and environmental services companies, together with skilled professionals, a highly skilled labor force and capable management, give our region an opportunity to be of particular assistance to industry through education, training, technology cooperation, and through business relationships such as joint ventures. We expect that over time that all of our nations will develop successful Envirotech industry sectors and our Envirotech Business Council may well serve as a useful model.

The Environmental Business Council and its directors who represent the various sectors of this diverse industry are committed to a dual principle of facilitating the transfer of business experience and realizing new business opportunities, both within the domestic and international markets, particularly, with nations in our hemisphere.

The Agreement of Cooperation which the Environmental Business Council has recently entered into with CONCAMIN illustrates how the United States Envirotech Industry can

collaborate with industry in other nations in achieving the goal of sustainable development, which involves meeting the needs of the present without compromising the welfare of future generations. As you know, Mexico has instituted modern, excellent and comprehensive national environmental legislation, and it is committed to a course of effective implementation of these environmental laws and to improving the public sectors' environmental enforcement capacity at the national and state level. At a meeting in Mexico City last fall with CONCAMIN, the directors of the Environmental Business Council were invited to work with CONCAMIN in helping its member companies to achieve compliance with Mexico's new environmental laws. We were pleased with this invitation, and in response, at an important conference entitled Mexico's Campaign for a Clean Environment, held earlier this year in Boston, we signed our Agreement of Cooperation. The signing was witnessed by our Governor, William Weld, and by Rene Altamirano, Secretary General of SEDUE. Under this agreement, the Environmental Business Council assists CONCAMIN and its member companies to implement modern environmental management through information transfer, programs of education and training, and Technology Cooperation between EBC and CONCAMIN member companies. In furtherance of our agreement, during mid-year 1992, EBC member companies have participated in environmental conferences, seminars and workshops, in Monterrey, Mexico City and in Guadalajara. We

anticipate many more similar cooperative meetings in future years. We have also invited 25 Mexican educators and industry managers to participate in a program of training in environmental risk assessment. The participants will be the teachers in a new program of risk management being offered by CONCAMIN to its members. The training will be conducted in Washington, D.C. and in Boston in cooperation with the United States Environmental Training Institute, the Environmental Protection Agency and our EBC member companies. We expect that this industry environmental cooperative training program will be repeated at least annually. Subjects of instruction most important to industry will be covered in future sessions. We are confident of its value to Mexico's Industry and to our EBC members.

We have also the pleasure of announcing that our Governor, William Weld, will visit Mexico in a few weeks. He will meet with President Salinas, Minister Colossio, and other government and industry officials in furtherance of our agreement with CONCAMIN. His visit is a part of our effort to understand how the EBC and our member companies can be of assistance to industry in Mexico. Also, and more important, we want to work with Mexico's industry in creating long term business-to-business relationships in which the parties can contribute their respective skills and knowledge to create strong and vital

joint ventures to serve the needs of both public and private organizations for environmental goods, services, education, training, information and advice.

With our experience in Mexico as an illustration of how the Environmental Business Council might work with industry in other nations in our hemisphere, I would like to turn now to the broader issues that create the need for environmental goods and services. Here I refer to the rapidly developing national and international demand that high quality environmental management practices be adopted as an integral part of the operation of all organizations, public or private, industrial or commercial.

The practice of environmental management concentrates on the internal operations of an enterprise which have the effect to minimize the adverse external environmental impacts of the organization's operations on its employees, managers, community and shareholders. It also is responsible for assuring owners and other stakeholders and the government that its operations are conducted in accordance with the environmental laws of the country or countries in which it is operating. Modern environmental management in reality is an element of the broader and more recently expressed global demand that industry achieve Sustainable Development.

There is under way in the United States and in other nations an evolving trend in environmental policy and industrial environmental management towards the "eco efficiency" that had

its origins in waste management beginning more than twenty five years ago. The initial development and accelerated growth of this trend is a response to growing citizen concern about the human health impacts of inadequate environmental operations of industry and the desire of industrial and corporate managers to avoid disasters such as Bhopal, shipwrecks which cause oil spills and such recent events as the explosion in Guadalajara. Business management is increasingly aware that the liability which attaches to such environmental disasters is not just one result of government action to penalize the actor, but it is the public condemnation of organizations and their managers that permit such disasters to occur. In addition, business managers have come to understand that preventing pollution and contamination has a positive economic benefit for the profitability of an enterprise. This is especially true as nations adopt and enforce, in response to citizen concerns, the mandates of the Earth Summit, and trade-related factors such as free trade agreements, modern and more stringent environmental policies to protect the human environment.

The U.S. experience is illustrative of the adoption by government of rigorous environmental policies and industry's response. In the early 1970's, company programs of "waste management" became the dominant industrial reaction to new environmental laws. This has been the historic strategy of industry in environmental management. Created largely in

response to the need to comply with a command and control regulatory system, for many years it therefore focused on "end-of-the-pipe" solutions.

As the costs of disposal of waste rose and the uncertainties about future liabilities increased when the waste could be traced back to the generator, a new response by industry emerged which we can describe as "pollution prevention." Under this policy approach, which is the current focus of America's domestic industry and public policy, industry is encouraged to prevent pollution and thereby minimize the costs of treatment, storage and disposal as well as the hidden long term liabilities of waste disposal. While the policy is now quite well settled at the national and state levels, implementation is becoming more focused with government more frequently imposing the severe civil and criminal penalties authorized by strict environmental regulation.

There is now emerging a new contemporary approach which I have described as the "Greening of Industry". In the United States and other areas of the world public environmental policy is driven by "Green" political forces. And, as we approach the 21st century, practical economic realities which assess the impacts and cost of poor quality environmental management will accelerate the industrial "greening" movement. New literature for the business community has recently been published on this subject. An important statement of business and the environment

is found in Changing Course, published by the Massachusetts Institute of Technology Press earlier this year. It is a global business perspective on development and the environment that was written by Stephen Schmidheiny, Chairman of the Business Council for Sustainable Development. This committee of 50 chief executive officers of multilateral corporations came together at the request of Maurice Strong, Secretary General of the United Nations Conference on the Environment and Development, the organizers of the Earth Summit at Rio, to offer a business perspective on the issues of the environment and development.

The Business Council prepared, after extensive hearings in various regions of the world, a statement on environmental policy. It also had a major role in shaping the recommendations adopted within Agenda 21, the environmental action plan adopted by the Conferees at Rio, that relate to the management of industrial organizations, technology cooperation, the prevention of pollution and management of waste. As the Council declared, ". . . Business will play a vital role in the future health of this planet. As business leaders, we are committed to sustainable development, to meeting the needs of the present without compromising the welfare of future generations. New forms of cooperation between government, business, and society are required to achieve this goal." The declaration makes several additional important points, among them that progress towards sustainable development makes good business

sense because it can create competitive advantages and new opportunities. These will require shifts in corporate attitudes and new ways of doing business. Sustainability also demands that attention be paid to the entire life cycles of products. Corporations that achieve greater efficiency while preventing pollution through good housekeeping, material substitution, cleaner technologies, and cleaner products, and that strive for more efficient use and recovery of resources, can be called "eco-efficient."

A central argument of the Business Council and of Agenda 21 is that long-term business-to-business partnerships and direct investment programs provide excellent opportunities to transfer the experience and training and technology needed for sustainable development from those who have it to those who require it. This new concept is called "Technology Cooperation". It relies principally on private initiatives, but it will be greatly enhanced by support and cooperation from governments and other institutions, including multilateral lending agencies, that are engaged in various aspects of development work. The Environmental Business Council's agreement with CONCAMIN is an example of Technology Cooperation in practice.

In a World Resources Institute study that was also prepared for the Earth Summit, entitled Beyond Compliance, a New Industry View of the Environment, and available from the Institute in

Washington, D.C., several dozen companies reported on their environmental management initiatives. They told what they are engaged in in the way of environmental management, why they were doing it, and what victories and disappointments they had experienced as they sought to alter their approach to managing their operations so as to protect the environment. The stories disclose why the companies believe the steps they are taking toward modern environmental management are both important and beneficial to them:

- Pollution is waste, and preventing it at the source can save money and materials and end-of-the-pipe remediation.
- Acting voluntarily now can minimize future risks and liabilities and make costly retrofits unnecessary. This can also aid in the design of more efficient regulations.
- A company moving "ahead of the curve" on environmental issues will find competitive advantage over those struggling to keep up.
- New "green" products and processes can increase consumer appeal and open up new business opportunities.
- A reputation for being environmentally progressive improves recruitment, employee morale, investor support, host community acceptance and managements' self-respect.

These experiences, drawn from national and transnational corporations, are instructive and should be of value to companies engaged in research and analysis to determine the appropriate present and future course for their organizations in the achievement of sustainable development and good environmental management.

I would like to close my remarks with some thoughts on what I believe will have the most substantial impact on environmental management of industrial organizations throughout the world. Here I refer to the actions taken at the Earth Summit in Rio. I attended this important international meeting as a delegate for the Environmental Business Council together with our President Jack Driscoll who is the founder and President of HNU Systems, Inc. of Newton, Massachusetts, a company which manufactures environmental monitoring equipment sold throughout the world. Together with the multilateral agreements achieved on biodiversity and global warming, the conferees, from more than 170 nations and represented there by more than 100 heads of state, adopted Agenda 21, the comprehensive program of actions required to achieve sustainable development. It contains detailed recommendations for how the various sectors of nations can themselves achieve sustainable development.

Over time, the Rio initiatives will have a material effect on the conduct of industry throughout the world. This is so, I believe, because international political leadership and the worlds citizens will insist that corporations prepare and implement effective modern environmental management systems. Agenda 21 will be implemented by nations according to their own local circumstances, but there will be both national, regional and international pressure brought upon all sectors to respond to the grave environmental problems facing the planet. And, as

we have already observed, industry is an important actor in resolving those problems. We can also expect a powerful stimulus for improved environmental management from the Sustainable Development Commission, a new permanent international agency, presently being designed by the United Nations. A charter for its operation is now being prepared by the United Nations General Assembly and its form and responsibilities will be decided during the next few months. The Sustainable Development Commission will certainly, over time, require updated information on the status of nations' environment as a follow on to the early reports entitled Nations of the Earth Report prepared by nations and submitted for a data baseline for the Earth Summit. They will also, I believe, encourage or perhaps even require the preparation of national environmental action plans and the commission will also attend to monitoring the implementation of such programs. The Multilateral lending agencies including the World Bank are also revising their loan processes and decision making so as to implement Agenda 21. The new commission will, I believe, be active in these and other matters as it promotes policies and actions designed to protect the human environment. We can anticipate national sustainable development commissions to be organized, and that increasing technical and intellectual resources globally will be devoted to understanding and making proposals for action to be taken in response to the environmental crisis which presently faces the planet,

particularly by industry. In addition, the new commission will solicit the advice and expertise of non governmental organizations such as the Environmental Business Council.

In closing, the Environmental Business Council, organized to bring our experience and technology to industry through the world, as well as education, training, information and advice, looks forward to the opportunity to be of service as partners with industry in each of our nations and to the development of relationships of cooperation and mutual benefit as we all strive to achieve sustainable development. We hope this represents the beginning of long-term and successful relationships of mutual trust, confidence and benefit with our neighbors in industry throughout the hemisphere.

7135C

July 21, 1992

STATEMENT

By: Donald L. Connors, Esquire, AICP

Choate, Hall & Stewart
Exchange Place, 53 State Street
Boston, MA 02109
Chairman, Board of Directors
Environmental Business Council Inc.

before the United States Senate Committee on Governmental Affairs

I am here today in support of the Senate 2632, a bill to establish a National Environmental Technologies Agency (NETA). This new agency will be the instrumentality for research support for environmental technologies and applications. This pure and applied research will foster public and private partnerships in the development of environmental products and services for the domestic and international marketplace.

I am an environmental lawyer and a partner in the Boston law firm Choate, Hall & Stewart. My practice is concentrated in environmental law and in the representation of corporations and other organizations in the environmental and energy field. I have been engaged in this area of law for more than 20 years and have served clients, both public and private, in the domestic and international field. I have written and lectured extensively in the United States and abroad and I am a director of many environmental organizations having domestic and international missions.

The Environmental Business Council Inc. ("EBC"), is an association of environmental and energy companies, educational institutions and state government agencies. These organizations comprise the "Envirotech Industry". Headquartered in Boston, the EBC was organized to assist the Envirotech Industry in business development in the domestic and international market. The EBC has gathered many member organizations from all sectors of this diverse industry. Most members are from the northeastern United States and Eastern Canada. Some are large, many are small and young. We are growing rapidly and plan to extend our geographic scope as time and our resources will allow.

The EBC's stated mission is to foster the development of a competitive Envirotech Industry in the domestic and international marketplace to enhance and maintain a clean and productive environment. To carry out this charge, the EBC has organized committees which offer programs ranging from seminars on international business development to human resource issues such competitive compensation strategies in the workplace. Our International Trade Committee has initiated projects in Latin America, particularly in Mexico; Eastern Europe and the Commonwealth of Independent States; the Far East and ASEAN regions and most recently, for Africa. The Committee seeks to identify markets for environmental and energy products and services and facilitate technology cooperation, i.e., the building of partnerships between Envirotech organizations and industry, educational institutions, firms and governments of other nations.

The EBC has established excellent working relationships with the United Nations Environment Programme, the U.S. Environmental Protection Agency, the U.S. Agency for International Development and other federal and state agencies, especially in the Northeast and with non-profit organizations having missions which complement our purposes.

The Envirotech Industry as we understand it includes both manufacturing and service companies. Within these two main groups, the manufacturing sector includes: environmental equipment, such as air and water monitoring and cleaning devices, marine electronics and technology products, energy equipment including photovoltaic cells, and consumer and industrial products, such as recycled packaging goods. The service sector includes analytical services, such as laboratory or on-site testing facilities; energy or energy conservation consulting services, and professional and support services including law, accounting, financial and other business services. Finally, operational services, such as solid and hazardous waste treatment, storage, transportation and disposal, are within the service sector. Educational institutions are an integral part of the industry and provide a vital source of personnel and research for the successful development of its various sectors. A more detailed description of industry sectors is attached to this statement.

The proposal to establish NETA is an essential component in what must be a comprehensive, global strategy to assist the nations of the world in achieving environmental protection and sustainable development ("Sustainable Development"). This term has become the centerpiece of the international environment/economic development debate. It was defined in the report entitled "Our Common Future" issued by the World Commission on the Environment and Development in 1987. It refers to development or progress that "meets the needs of the present without compromising the ability of future generations to meet their own needs". The commission, headed by Norwegian Prime Minister Gro Harlem Brundtland made Sustainable Development the theme of its entire report. And it is that concept that was the centerpiece of the United Nations Conference on the Environment and Development or "Earth Summit" held in Rio de Janeiro in June of this year. I attended the conference as an accredited representative of the EBC and was joined by the President of the EBC, Jack Driscoll, who is president and founder of HNU Systems Inc. of Newton, Massachusetts, a company that manufactures environmental monitoring equipment that is sold throughout the world.

The Envirotech Industry has, for a considerable period of time, existed in relative obscurity. There exists in America and particularly in the Northeast a high concentration of businesses providing goods and services which protect and monitor the quality of the human environment, assure clean air and

water, provide remedial services in cleaning up contaminated property, and manage the environmental affairs of business and other organizations. Advantages such as our cluster of outstanding universities, vigorous environmental regulatory policies and enforcement, an existing base of sophisticated high-technology manufacturing and environmental service companies, together with a highly-skilled labor force, give us a competitive advantage in a rapidly expanding global marketplace.

The cultural focus on our citizens health has influenced the development of the industry. However, the environmental field is primarily regulation driven. The US domestic environmental industry is a huge market that has been created by the adoption, since the late 1960's, of federal and state legislation requiring, inter alia, (a) the assessment of environmental impacts of government sponsored and private projects subject to government permitting, and (b) comprehensive programs in (i) air, water, and coastal zone management, (ii) in hazardous waste, Superfund and contaminated site remediation, (iii) for natural resource protection including wetlands, endangered species and other critical resources.¹ The prospects for the

¹/ Our Envirotech Industry grew in response to these regulations and to realize the economic benefits of energy and resource conservation. According to William K. Reilly, Administrator of EPA, the domestic environmental business sector generates sales of more than \$100 billion annually. The international market for environmental goods and services is enormous, already more than \$200 billion per year, and it will grow rapidly through the end of the century.

adoption of additional domestic environmental regulations are good.

International environmental law is in an early stage of development and a number of political and trade-related factors will cause more countries to adopt and implement comprehensive environmental law and investment programs. Recent international developments persuade me that the U.S. experience will strongly influence the form and substance of such laws. Increased public awareness of environmental issues and heightened corporate concern about catastrophes like Bhopal and super tanker shipwrecks accelerate the demand for improved environmental management which, in turn, creates a need for environmental goods and services.

The most influential of these factors are the actions taken at the U.N. Conference on the Environment and Development ("UNCED" or "Earth Summit") in Rio de Janeiro. The gravity of environmental issues such as ozone depletion, transboundary disposal of hazardous waste, global warming, destruction of vital forestry resources and the like led to the international initiatives which were adopted there.

The 172 nations represented at UNCED took the following actions.²

2/ The actions taken at Rio of most direct interest to the Envirotech Industry, which will expand the global market in

(Footnote Continued on Next Page)

- Adopted by consensus Agenda 21, a detailed and comprehensive action plan for sustainable development that outlines specific recommendations on many environmental subjects from population growth to energy - it describes an ambitious program for nation states to follow to achieve the objectives of a clean and healthy environment.
- Directed the U.N. to establish this year, a Sustainable Development Commission to oversee the implementation of Agenda 21. It will report to the Economic and Social Council of the U.N. on coordination matters and to the General Assembly on matters of substance. Periodic status reports are likely to be required and a reorganized and better funded United Nations Environmental Program is under consideration.
- Adopted a non-binding statement of 27 broad principles for guiding environmental policy that focuses on protection of the environment while nations seek to achieve economic development.
- Adopted a legally binding treaty (if ratified by sufficient member states) on safeguarding biological diversity and genetic resources and the sharing of their benefits. One hundred and fifty-three nations signed - not the U.S.
- Adopted a legally binding treaty (if sufficient member states act) on climate change - signed by 153 nations - not Malaysia.
- Adopted a statement of forest principles which is not binding, but which will likely serve as the basis for a future legally binding convention.

2/ (Footnote Continued From Previous Page)

environmental and energy goods and services, are found in the Declaration of Principles No. 11, 13 and 17. These oblige states to enact affirmative environmental legislation, provide compensation for victims of pollution and other environmental damage, including transboundary damage, and require environmental impact assessment as a national policy with environmental actions being subject to decisions by a competent national authority. More detailed proposals for the adoption of environmental law and its implementation and enforcement are found in Agenda 21.

The international business opportunities for the Envirotech Industry created by those initiatives will be realized by the sale of goods and services abroad and in business to business technology transfer and cooperation. The Business Council for Sustainable Development, an association of fifty CEO's of multinational corporations organized to formulate a business perspective for the UNCED proceedings, supports the proposals for environmental technology cooperation contained in Agenda 21.³ The Business Council argues that technology cooperation is required to build the capacity of nations to provide a cleaner environment. Successful technology transfer will involve commercially beneficial cooperation between companies.

The EBC Directors believe that many of the future business and job creating arrangements proposed in Agenda 21 and supported by the council will involve U.S. Envirotech companies.

Over time, the Rio initiatives and their progeny will influence nations and the business sector, leading to new laws, regulations and environmental investments. This will result in increased business for the Envirotech Industry if the necessary resources are mobilized so that the industry is able to take advantage of the global opportunity that is before us. As U.S. foreign aid focuses on environmental and economic, rather than military needs, our Envirotech Industry will gain additional strength in the global market.

3/ See Stephan Schmidheiny, *Changing Course*, especially Chapter 8. The Business Council for Sustainable Development MIT press 1992.

Having in mind my experience, the mission and capabilities of associations such as the EBC I would like now to turn to particular provisions of Senate Bill 2632. I applaud the insight which led to this proposal and the concern for the human environment and our economy which shapes its purpose. I believe that the needs of the world for environmental and energy technology and expertise are great and that we in America are in a unique historic position to serve those needs. I recommend that the NETA mission statement be revised so that it will be directed to the global imperative of Sustainable Development, an idea which has acquired international standing and around which environment and development issues are being debated. The actions taken in Rio are designed to advance this principle and markets will be created to serve demands of nations to achieve that goal. It will advance its purpose through supporting pure and applied research in the physical, natural and social sciences, energy conservation, in engineering and in technology transfer.⁴

To support the participation/role of the American Envirotech Industry in the global environmental marketplace, I also recommend that you consider amending NETA to provide the following:

First, expand the mission of the agency to include environmental technology developments worldwide;

4/ The National Institutes of Health in Bethesda, Maryland may serve as a useful model for NETA, at least for the research function.

Second, add functions that will permit the agency to assist the U.S. Envirotech Industry to serve and benefit from the growing world environmental marketplace;

Third, the new agency should concern itself with the necessary economic policy, as well as management and legal issues that are important in developing and serving the global market in environmental and energy goods and services;

Fourth, the agency should have the ability and resources to assist private industry, non-profit organizations, and universities in environmental technology and management training globally.

If we add these elements to the legislation, we will have a comprehensive global strategy to assist the world in achieving environmental protection and Sustainable Development. This strategy will allow us to take full advantage of our achievements in environmental technology and management during the past quarter century. These have given us a tremendous competitive advantage which unfortunately, under current circumstances, we have not been able to use effectively either in the interest of global environmental health, or in our own economic interests.

In general, the organization and structure of NETA seems appropriate, although it may require modification if the proposals I have advanced are adopted. I will be pleased to provide further assistance or comments if you desire on particular aspects of the proposal as it is being developed.

A final but important point about NETA and its mission relates to technology transfer. I urge you to bring to this enterprise the advice of people who are experienced in the business of technology transfer. You will find experts in this activity at universities such as the Massachusetts Institute of Technology, Stanford and the University of Michigan. Federal research institutions are another source of counsel. Professionals in the field have substantial background in transferring for commercial exploitation the technology that originates in research at their institutions. The private sector also has experienced managers who have used licensing, joint venture, patent and trade secret agreements, partnerships etc. to share advanced environmental products and processes with companies and governments abroad. The Association of University Technology Managers which counts as members some 700 university professionals and 300 technology transfer professionals from industry could also be of substantial assistance to your committee. Lita Nelson from the MIT Technology Licensing Office is its president and would be pleased to consult with you and your staff.

I returned from Rio with a much heightened concern about global environmental problems, yet I was pleased that so many of the world's leaders by their attendance there, expressed their commitment to the human environment and to forging the responses needed to assure a decent quality of life for present and future generations.

There was begun there the process of designing a new international environmental regime. That will take clearer form over the next few years as steps are taken by the United Nations and its member states to implement the actions taken at Rio. A new international environmental legal regime will emerge and as it does it will create an unparalleled opportunity for America and our Envirotech Industry.

I also returned from Rio with a conviction, much stronger than when I left home in May, that the Envirotech Industry has an incredible opportunity both to be of service to the world and to create good high paying jobs. This will occur if we learn about and use information on new international developments which are quickly expanding the global market for environmental goods and services and education. We can connect our industry, research and academic institutions, our experienced state and federal environmental and energy agencies to satisfy that need.

In conclusion, I would like to add a personal recommendation that the Congress establish an organization that could be of great value as nations strive to achieve Sustainable Development. It could also engage the energy, the experience and enthusiasm of our environmental professionals. Our many years' experience with environmental regulation and management have developed a competent corps of experienced environmental professionals. At present there is no effective mechanism to connect such individuals who would like to be of service to the

environment as volunteers. It would be most productive if we would establish a volunteer corps, lets call it the "Environmental Peace Corps", which would identify, train and disperse experienced environmental professionals to the nations of the world that request such assistance. I have in mind here service, not at the village level where my Peace Corps Volunteers son and daughter-in-law work in Kenya, but rather as advisors in more senior positions to government, industry, resource agencies, educational institutions and non-governmental organizations. We have the human resources in America to be of valuable assistance. And I know there are people who will serve if they can find the opportunity and receive the support and encouragement required to commit a portion of their lives in service of America and the environment. I have spoken to officials at the United Nations and the Environmental Protection Agency about this proposal. I hope such an initiative can be launched this year as part of America's response to the Earth Summit in Rio.

I look forward to being of any whatever further service I can be to you in these matters.

3712C

ENVIRONMENTAL INDUSTRY MARKET SECTORS

June, 1992

MANUFACTURING SECTOR

- **Consumer Products/Industrial Products**

Energy efficient lighting and appliances, waste saving devices, products and packaging made from recycled materials, pumps and other industrial products, and other environmentally oriented consumer/industrial products.

- **Energy Equipment**

Energy efficient motors, industrial lighting, power plant controls, photovoltaic cells, cogeneration and resource recovery equipment, HVAC control systems, instrumentation, monitoring, testing and other energy equipment.

- **Environmental Equipment**

Oceanographic instrumentation, air, water, and soil monitoring instrumentation, ecosystem, gas, and other environmental analysis equipment, air, soil, and waste treatment equipment, waste recovery and processing equipment, water cleanup, ultrafiltration, and other environmental treatment equipment, solvent/oil/coolant recover systems from the air, soil, and water, on-site cleanup equipment (incinerators and scrubbers), noise, vibration, and other pollution control equipment, chemical, refuse, landfill, radioactive, and other waste disposal equipment (i.e., containers, shredders, compactors, bailers and transportation equipment) and other waste disposal equipment.

SERVICE SECTOR

- **Analytical Services**

Laboratory and on-site testing of air, soil, waste, water, chemicals and other analytical services.

- **Energy Services**

Renewable and alternative energies management, waste-to-energy and cogeneration management, conservation and load management, systems, consulting, clean coal technologies, electric and magnetic field exposure management, and other energy consulting services.

- **Engineering & Design Services**

Systems consulting and design, process design, geotechnical and hydrological services, landfill and sewer design, waste disposal and water treatment design, noise abatement services, air/water pollution control systems design, and other engineering and design services, environmental audits, health, safety and fire audits, feasibility audits, hazard and risk assessments, economic impact assessment, air, water and soil analysis, chemical and hazardous waste treatment, remediation, nuclear site cleanup, asbestos abatement, air and water pollution control, continuous emissions monitoring, and additional consulting regarding environmental impact and pollution control.

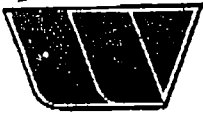
- **Operational Services**

Waste hauling, transferring, disposing, recycling, incinerating, composting, sludge management, recyclable materials marketing, offsite treatment, construction, project management, asbestos abatement and removal, underground tank services, and other operational services.

- **Professional & Support Services**

Legal, financial, insurance, marketing, information systems, management consulting, education and training, human resource management, and other professional and support services, training, technology transfer, research and development, and other educational services.

3250C



Western Governors' Association
600 17th Street
Suite 1705 South Tower
Denver, Colorado 80202
(303) 623-9378
FAX (303) 534-7309

Fife Symington
Governor of Arizona
Chairman

Bob Miller
Governor of Nevada
Vice Chairman

James M. Souby
Executive Director

December 16, 1992

Mr. Donald L. Connors
Choate, Hall, & Stewart
Exchange Place
53 State Street
Boston, MA 02109-2891

Dear Don,

I am writing to convey the interest and support of the western governors in an effort to forge a national envirotech industry trade association. At the Western Governors' Association (WGA) winter meeting on December 4th in Las Vegas, I had a chance to continue my discussions of the concept with our Chairman, Governor Fife Symington of Arizona. He remains most enthusiastic about the idea and supportive of a role for WGA and individual governors. All of our governors wish to see this industry leverage the expertise gained in solving western environmental problems on national and international markets.

The industry is currently fragmented. Existing associations are centered on segments of the industry (e.g., Air and Waste Management Association, Hazardous Waste Action Coalition, Water and Wastewater Equipment Manufacturers Association), or are geographically localized (e.g., California Environmental Technology Partnership, Oregon Environmental Technology Association, Washington Environmental Industry Association). This fragmentation has hampered WGA efforts to work with the industry on economic development initiatives and to obtain industry input on matters of environmental policy.

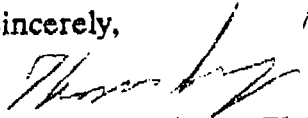
We see an urgent need for a united national source of information and advocacy for environmental policies and business opportunities. A private national trade association or umbrella group could provide a needed industry voice on both regional and national environmental initiatives, and help shape the debate on, for example, upcoming Superfund and the Clean Water Act reauthorizations. The envirotech industry also has a critical interest in education and training, technology transfer, foreign aid, trade policy, and other public policy areas.

A national trade group also is needed to represent the U.S. environmental industry in the global marketplace, creating opportunities for firms to network, pool international marketing resources, and interact with influential multilateral organizations like the U.N, the GATT, and the World Bank.

A public-private partnership in this endeavor makes sense, and the western governors would envision playing three major roles. First, the governors will provide visibility to the effort, speak to the need for an envirotech industry voice, and encourage firms in their states to participate. The governors also are willing to participate in a series of regional workshops to introduce the concept in the West. Second, the governors would instruct their economic development and trade promotion agencies to support these efforts. Third, WGA intends to be a partner in this initiative by helping to raise resources and providing staff support.

I am pleased to be able to report such strong continued support by our governors, and look forward to working with you towards a national envirotech trade group.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas O. Singer", written over a horizontal line.

Thomas O. Singer, Ph.D.
Director of Research

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a publication.

Publications have not been scanned in their entirety for the purpose of digitization. To see the full publication please search online or visit the Clinton Presidential Library's Research Room.

ENVIRONMENTAL BUSINESS JOURNAL®

Strategic Information for a Changing Industry

Vol. IV No. 10 October 1991

PRIVATE FINANCING—VENTURE CAPITAL

Environmental Business Publishing Inc.

VCs "SELECTIVELY OPTIMISTIC"

Put your money where your mouth is. This may be a legitimate challenge after reviewing the results of EBJ's second annual survey of venture investment in the environmental industry. The 64 firms surveyed expect to invest \$520 million in environmental deals in the next two years.

But venture capital firms can't be blamed for being overcautious. Market uncertainty, marginal management, the recession and comparative lack of proprietary technologies providing cost-effective solutions are a few reasons why prospects for sizable returns can be dim. The responding firms have invested \$312 million to date in 165 companies (there is some overlap in the latter figure due to syndicates) but an accurate figure on average returns is not yet available.

Across all industries, VC firms have suffered from declining returns—estimates for overall returns are lower than 10% for the late '80s. Not only returns have suffered. In 1987, \$4 billion flowed into the VC community from investors. In 1988 the figure fell to \$2.8 billion; in 1989, \$2.2 billion; in 1990, \$1.8 billion and in the first half of 1991, VCs raised less than \$300 million. Clearly, with less money available, there is less to invest—driving investment dollars to the conservative side. But VCs still have their eye on the environmental industry. The difference is they are choosing to be more selective, do their homework and exercise more patience with market development.

Not surprisingly, good management tops the list of why VCs make deals. A unique and cost-effective product is not far behind, although not possessing a proprietary technology doesn't always rule out a deal. Regulatory concerns are more likely to prevent a deal than make one, especially among top firms (those that have done more than two environmental deals). Companies relying on anticipated regulation or revamped enforcement have often overestimated their market.

"Some of the early naiveté has been dispelled," said Harry Healer of the Venture Capital Fund of New England. Mead Wyman of Hambrecht

EBJ EXECUTIVE SUMMARY

Environmental companies go to bat in the most under-capitalized and challenging industry. Rapid growth, changing regulations, personnel shortages and customers digging out of the recession are some of the curveballs thrown to executives. But, like a determined cleanup hitter, they keep coming back for more. Many seeking cash for growth now even find themselves stepping up to the plate to face the fastballs of venture capital. VCs usually demand a commitment to grow at least a \$50-million company and expect a quick return. Unlike electronics or biotech, the environmental industry has not yet produced a lineup of entrepreneurs who have a history of raising venture capital, and companies are often perceived as poorly managed. This issue of EBJ delves into VCs' perceptions of the industry and what qualities companies need to close a deal. We also look at recently backed companies, financing via banks and leasing, and two venture-backed firms that went public this year.

WHY VENTURE CAPITAL TURNS DOWN DEALS

Ratings on a 10-point scale. 10 = most common reason for not investing

All	Top*	Reason for not investing
8.9	9.2	Lack of Seasoned Management
7.4	7.3	Poor or Unrealistic Business Strategy
7.0	8.0	Regulatory Hurdles Clouding Development
6.8	7.1	Lack of Compelling Economics (product doesn't provide a cheaper solution)
6.4	6.7	Lack of Proprietary Technology
6.1	6.7	Little or No Track Record
5.9	5.6	Market Too Competitive
5.9	6.4	Company Requires Too Much Capital Over Time
5.9	5.2	Low Profit Margins
5.8	5.6	Market Niche Too Small/No Product Diversity
5.4	4.8	Founders Valuation Unreasonably High

WHY VENTURE CAPITAL INVESTS IN DEALS

Ratings on a 10-point scale. 10 = most common for investing

All	Top	Reason for investing
8.6	8.3	Seasoned Management
7.4	7.8	Product Has Compelling Economics
7.1	7.6	Proprietary Technology
7.0	6.7	Good Profit Margins
6.9	7.6	Proven Track Record
6.8	6.8	Attractive Valuation/High Potential for Return
5.8	5.6	Regulatory Advantages Pose Barrier to Competition
5.8	5.7	High Growth Market Niche
5.6	6.7	Broad Market Application for Product/Service

* Top VC firms have completed more than two deals

& Quist (Boston) was not alone in noticing "a hesitation in demand curves in '89 and '90," resulting in his being "more cautious about how companies can prosper." Wyman believes a venture investor's portfolio should return 15-25%. He thinks H&Q's fund can do better, but realizes that it may take longer. The firm has done eight environmental deals so far.

H&Q has completed two placements recently—Gensym Corp. (Cambridge, Mass.) and Alton Geoscience (Irvine,

Calif.). Gensym is a \$12-million process control software firm with customers in the chemical, aerospace, manufacturing and automotive industries. Wyman liked the waste minimization/process control area and Gensym's "break-through technology." Gensym uses "artificial intelligence fast enough to react to the rapid flow of data" and allow "real time [process control] management by the computer." Alton is primarily a risk assessment and UST remediation firm.

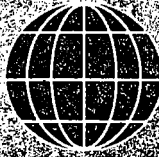
Continued on page 4

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a publication.

Publications have not been scanned in their entirety for the purpose of digitization. To see the full publication please search online or visit the Clinton Presidential Library's Research Room.



ENVIRONMENTAL BUSINESS COUNCIL

COME JOIN US AS WE WORK TO DEVELOP BUSINESS-TO-BUSINESS RELATIONSHIPS IN THIS EXPANDING MARKETPLACE. AND RAPIDLY

THE ENVIRONMENTAL BUSINESS COUNCIL IS COMMITTED TO CONNECTING THE ENVIROTECH INDUSTRY TO BOTH THE DOMESTIC AND INTERNATIONAL MARKETPLACE AS AN OFFICIALLY RECOGNIZED ORGANIZATION AT THE UNITED NATIONS CONFERENCE ON THE ENVIRONMENT AND DEVELOPMENT, THE EARTH SUMMIT AT RIO DE JANEIRO IN JUNE 1992. THE COUNCIL'S DELEGATES, CHAIRMAN DONALD CONNORS AND PRESIDENT JACK DR. SCOLL HAD AN OPPORTUNITY TO DEVELOP AN APPRECIATION OF THE DEPTH AND GRAVITY OF THE WORLD'S ENVIRONMENTAL PROBLEMS, TO MEET AND NETWORK AMONG DECISION-MAKERS THROUGHOUT THE WORLD TO ASSESS HOW TO CREATE OUR PLACE WITHIN THE GLOBAL EFFORT. THIS CONFERENCE WAS AN INITIAL STEP IN A PROCESS THAT WILL HAVE FAR-REACHING CONSEQUENCES FOR ALL OF US IN THE ENVIROTECH INDUSTRY.

1991-1992

Environmental Business Council, Inc.

Providing Leadership for the Envirotech Industry

Donald L. Connors
Chairman, Board of Directors
International Environmental Technology Institute, Inc.
Chairman, Board of Directors
Environmental Business Council, Inc.
Exchange Place - 53 State Street
Boston, Massachusetts 02109
(617) 227-5020

December, 1992

© 1992 International Environmental Technology Institute, Inc.

Environmental Business Council, Inc.

Providing Leadership for the Envirotech Industry

1. There are expanding global markets for environmental goods and services.
 - Heightened public environmental awareness, corporate concern to avoid disasters, and trade related factors (NAFTA)
 - 1992 UN Conference on the Environment and Development in Rio de Janeiro stimulates demand
2. The United States is well positioned to be the global focal point of the envirotech industry.
 - World class educational institutions
 - Clusters of environmental businesses organized under the Environmental Business Council
 - Experience in rigorous environmental regulation programs
3. The International Environmental Technology Institute, Inc.
 - International center of excellence in environmental management, research and implementation
 - Annual Environmental Business Conference
4. We can link our region's resources with the emerging global envirotech industry.
 - International Envirotech Conference, Trade Show and Exposition.

Environmental Industry

Key Concepts

- Environmental goods and services -- the product
- Corporate environmental management -- the buyers
- Environmental Business (Envirotech) Industry -- the sellers
- Determinants of National and International Competitiveness
(Professor Michael Porter, Harvard Business School)
 - economies are specialized
 - competitive success concentrated in particular industries and groups of industries
-- called clusters
 - United States has a variety of envirotech clusters.

The international envirotech market is driven by:

- Increased public awareness of environmental issues
- Heightened corporate concern about catastrophes, like Bhopal, the explosion in Guadalajara and supertanker shipwrecks
- Initiatives adopted and implemented at Earth Summit in Rio in 1992.
- Trade related factors (eg. NAFTA).

These factors accelerate the demand for improved environmental management which in turn creates the need for environmental goods, services, education, training, information, and advice.

1992 UN Conference on the Environment and Development in Rio de Janeiro

- Relationship between economic development recognized at Stockholm Conference in 1972
- Focus of “Our Common Future” report by Brundtland Commission in 1987
- General Assembly called for International Conference in December, 1989
- Earth Summit organized to address

Protection of the atmosphere

Protection of land resources

Protection of fresh water resources

Protection of oceans, seas, and coastal areas and for their rational use and development

Environmentally sound management of biotechnology and hazardous waste

Prevention of illegal traffic in toxic products and waste

Improvement in the quality of life and human health

Improvement in living and working conditions of the poor

Eradicate poverty

Stop environmental degradation

1992 UN Conference on the Environment and Development in Rio de Janeiro

- **Actions**

1. adopted Agenda 21, an action plan for sustainable development
2. directed the United Nations to establish a Sustainable Development Commission to oversee implementation of Agenda 21
3. adopted non-binding statement of 27 broad principles for guiding environmental policy
4. adopted a legally binding treaty to safeguard biological diversity and genetic resources
5. adopted a legally binding treaty on climate change
6. adopted a statement of forest principles.

- **Follow-up**

1. UN General Assembly began on September 14 to draft charter for New Sustainable Development Commission to monitor Agenda 21 implementation - Economic and Social Council members
2. Strengthened UN environmental programs
3. Compilation of national reports on environment and development
4. World Bank and other multilateral leaders restructure loan processing and policy to implement Agenda 21
5. Release of the energy world wide of citizens, government and non-governmental organizations to protect the environment

1992 UN Conference on the Environment and Development in Rio de Janeiro

- Agenda 21

1. Revitalization of growth with sustainability
2. Dual approach to alleviating poverty while improving conservation and sustainable development
3. Management of human settlements in a manner that improves the quality of life and reduces environmental risks
4. Making efficient use of the earth's resources and implementing strategies for the sustainable use of land, fresh water, biological resources, and energy
5. Action programs dealing with the atmosphere, oceans, and seas, as well as with living marine resources
6. Reducing waste generation, recycling waste into productive activities, and finding safe ways to dispose of waste.
7. Means of implementation
 - New international environmental non government organizations
 1. Business Council for Sustainable Development
 2. Planet Earth Council - organized in Costa Rica (post summit) - 28 leading scientists
 3. New information, training, scientific capacity building organizations now underway

Rio initiatives and other urgent needs for good environmental management will influence nations and the business sector, leading to new laws, regulations, and environmental investments. This will result in increased global business opportunities for the Envirotech industry.

The international business opportunities for the Envirotech Industry created by the Rio initiatives will be realized in large measure by the sale of goods and services abroad. These business opportunities will also be realized by Envirotech organizations establishing business-to-business relationships with decision makers from other nations. This is known as technology cooperation.

Major International Market Sectors

- Analytical Services
- Solid Waste Management
- Hazardous Waste Management
- Asbestos Abatement
- Water Infrastructure
- Water Utilities
- Environmental Consulting
- Resource Recovery
- Instrument Manufacturing
- Air Pollution Control
- Waste Management Equipment
- Environmental Energy Resources
- Urban Planning
- Integrated Coastal and Ocean Management
- Environmental Policy and Law
- Education and Training, including Public Communication

The environmental field is regulation driven.

A. The assessment of environmental impacts of government sponsored or permitted projects.

B. Comprehensive programs in:

1. air, water, and coastal zone management.
2. toxic and hazardous waste management - contaminated site remediation.
3. natural resource protection including wetlands, endangered species and other critical issues.
4. solid and special waste management.
5. worker safety and health
6. environmental risk assessment.

C. Market size

1. Domestic: \$120 Billion
2. International: \$250 Billion and growing at about 15% each year

The Envirotech Industry

- **What the envirotech industry does:**

- Provides environmental goods and services
- Protects and monitors the quality of the human environment
- Assures clean air and water
- Provides remedial services to clean up contaminated property
- Implements environmental policy and management.

- **Why the United States is a world center:**

- clusters of outstanding world class universities
- rigorous environmental regulatory policies and enforcement
- existing base of high tech manufacturing and environmental services companies
- highly qualified professionals
- highly skilled labor force
- clusters of envirotech industry

The Environmental Business Council

The Environmental Business Council (EBC) is an association of environmental and energy firms organized to foster the development of an effective and competitive envirotech industry for the purpose of enhancing and maintaining a clean and productive environment.

The Environmental Business Council provides active membership programs, including networking, domestic business development initiatives, international trade opportunities, and education and technology transfer.

The Enviromental Business Council

- **Provides**

- networking
- promotion of business opportunities for member companies - domestic and international
- market research
- training / seminars / information dissemination
- coordination of technology cooperation

- **Potential Program Activities**

- lobby at the local, national and international level of government on issues of importance to industry
- establish good working relationship with Clinton/Gore Administration agencies and the Congress.
- organize the National Environmental Business Council and chapters.
- plan and conduct the National Environmental Business Conference with the Environmental Business Journal.
- publish the Envirotech Industry Trade magazine.
- fund International Environmental Technology Institute
 - a. analysis of global environmental needs and markets for goods and services
 - b. comprehensive survey of envirotech organizations and decision makers for environmental goods and services
 - c. assessment of global envirotech education and training needs.
- develop strategic plan for international envirotech conference, trade show and exposition.
- create envirotech consortia on specific issues
- implement Freedom Support Act - Independent States of former Soviet Union
- defense conversion - Mitre Corp.
- establish network with national and international agencies having an influence on sales of environmental goods and services
- promote business development opportunities in NAFTA debate
- promote business development opportunities in National Environmental Business Foundation

Environmental Business Council

Partial list of accomplishments (1991-1992)

- Commendation for Excellence from Mass. Quincentennial Commission.
- Nomination for the President's Environment and Conservation Challenge Award
- Speaker's Forum (eg. Lt. Gov. Cellucci, EPA Regional Administrator Belaga, DEP Commissioner Greenbaum, etc.)
- Mexican initiative: Agreement of Cooperation with CONCAMIN.
- Participation in the XXIII Latin American Industry Congress - invitation to assist Latin American industry.
- Canadian initiative.
- Polish training initiative.
- "Building Globally" Conference - Eastern European environmental ministers visit.
- Testimony on U.S. Senator Barbara Mikulski's environmental legislative proposal.
- Environmental Trade Promotion amendment to Export Enhancement Act of 1988.
- Freedom Support Act (promoting EBC to assist former Soviet Republics).
- U.S. Representative Gerry Studds' proposed National Environmental Business Foundation.
- Active committee sponsored seminars, meetings and workshops
- Many successful business relationships domestically and internationally

International Envirotech Conference, Trade Show and Exposition

- secure participation of leaders of public and private interests nationally and internationally
- directly advance the practice of excellence in corporate environmental management, globally
- establish primary international forum for industry members and other interests to network
- create International Envirotech Exchange

International Envirotech Conference, Trade Show and Exposition

- secure participation of leaders of public and private interests nationally and internationally
- directly advance the practice of good corporate environmental management, globally
- establish primary international forum for industry members and other interests to network
- create International Envirotech Exchange

Schedule of implementation

- November 1993
 - Select one portion of the proposed Event, e.g., the Conference, and do it in a way that is strategically focused on the Envirotech industry's high end, involving the most important players in the world.
 - Guarantee the international impact of the conference by making one of its features the world's largest satellite conference.
 - Make the conference an international media event by broadcasting portions of it on television.
 - Involve players from around the world in the planning process for the larger 1994 Trade Show, Conference and Exposition.

International Envirotech Conference

Schedule of Implementation

- November 1994.
 - Run the full International Trade Show, Conference and Exposition.
 - Convene, for the second time, an international group to plan the 1995 Conference.
 - Announce that we have convened a new group—with representatives from throughout the world—to join us in brainstorming the development of a permanent “International Envirotech Exchange” in Boston—a facility complete with office complexes, convention/conference capabilities, libraries, audio-visual centers, permanent indoor/outdoor displays, biospheres, communications centers, etc. This large-scale facility will accomplish the following: (1) Help accommodate the physical growth of the Event; and (2) Provide a permanent, year-round marketing and sales presence both for New England’s envirotech companies, government agencies, university think tanks, etc., and for companies and organizations throughout the world—e.g., the Germans, Japanese, Canadians, etc. The Exchange will be an ever-evolving international showcase for business, technical and regulatory solutions.

International Envirotech Conference

Schedule of Implementation

- November 1995
 - Run the full Event.
 - Announce the design of the “International Envirotech Exchange,” running an international press conference with architectural renderings, scale models, etc., completed for presentation.
 - Break ground on the new facility, if possible.
 - Run a separate event/press conference, at another point during the year, to announce links between the EBC, U.N. and Earth Day celebration, the nature and content of which needs to be determined.
- November 1996
 - Run the full Event.
 - Announce the partnerships (business, governmental, university, etc.) that have been formed to support the upcoming Exchange; announce the prospective tenants; announce any programs underway, etc.
- November 1997.
 - Open the permanent facility to celebrate the Event’s fifth anniversary.
 - The opportunity and enterprises underway at the time of opening will form the basis of an international media event.

Perspective

A global opportunity for our envirotech industry

by DONALD L. CONNORS

As evidenced by the recent Earth Summit in Rio de Janeiro, there now exists a rapidly expanding global market for environmental goods and services that offers enormous job creation potential. In New England alone the envirotech industry employed in excess of 50,000 people in the first quarter of 1992; more than 1 million people are employed nationwide. We in America are uniquely qualified to service this emerging market. The prospects for rapid growth of the industry will be realized only if we seize this opportunity to coordinate the available resources to understand the market and meet its needs.

The envirotech industry includes environmental and energy companies that manufacture products or provide services, as well as educational institutions and government entities. It has, for a considerable period of time, existed in relative obscurity. There exists in our region a high concentration of businesses providing goods and services that protect and monitor the quality of the human environment. Our world-class universities, vigorous environmental regulatory policies and enforcement, sophisticated high-technology manufacturing and environmental service companies, and highly skilled labor force and capable management all give us a competitive advantage. But if we don't use it, we will surely lose it.

The focus on our citizens' health, increased public awareness of environmental issues, and heightened corporate concern about catastrophes such as Bhopal, the Exxon Valdez oil spill and the recent disaster in Guadalajara accelerate the need for improved environmental management. This in turn increases the demand for environmental and energy goods and services. The U.S. domestic environmental industry is huge, already more than \$100 billion a year, and has largely been created by the adoption since the late '60s of federal and state environmental legislation. The prospects for the adoption of additional domestic environmental regulations are good.

International environmental regulation is in an earlier stage of development, and a number of political and trade-related factors such as the North American Free Trade Agreement will likely persuade more countries to adopt and implement comprehensive environmental law and investment programs. Environmental regulations, health protection and disaster prevention together create the global environmental market, now estimated to exceed \$250 billion annually and growing rapidly.

A factor in its future growth is the initiatives adopted by the 172 nations represented at the Earth Summit. These actions dealt with issues such as ozone depletion, disposal of hazardous waste, global warming, destruction of vital forestry resources, profound pollution of coastal lands and waters, and the very survival of the human



photo by Stuart Garfield

If we don't use it, our region's advantage in environmental technology will soon go to waste.

species. Collectively, the initiatives will shape the new international environmental legal regime that was launched at Rio.

Over time, the Rio initiatives and their progeny will lead to new environmental regulations and a favorable climate for environmental investments. This will result in increased business for the U.S. envirotech industry if the necessary resources are mobilized so that the industry is able to understand and take advantage of the global opportunity that lies ahead of us.

A consortium for the global environment must be quickly formed by the envirotech industry, federal and state governments, educational institutions, and other environmental organizations providing services in law, career planning and corporate environmental management. This compact, funded by public and private resources, will connect with relevant national and international environmental interests, including the United Nations. In addition to U.S. environmental policy initiatives, it will allow America to become the world leader in implementing the Rio initiatives, thereby building the U.S. envirotech industry and creating good jobs.

The elements of this strategy are clear. First, the federal government should immediately redirect a portion of our public investment into environmental and energy technology and its transfer for the benefit of us and the world. Legislation related to this purpose was recently filed by U.S. Sen. Barbara Mikulski (D-Md.).

Second, this undertaking must have sufficient resources to perform the research necessary to understand and, where appropriate, to advise others implementing the emerging international environmental regime. It should be encouraged, if requested, to advise nations and other interests about our considerable national experience in the implementation of environmental law and the practice of environmental management.

A third element is that the strategy should concern itself with the necessary economic policy—that is, the development of the global market in environmental and energy goods and services.

Finally, the government should assist private industry, nonprofit organizations and educational institutions in providing environmental technology and management training globally.

If we do these things, we will have a comprehensive global strategy to assist the world in achieving environmental protection and sustainable development. This strategy will also allow us to take full advantage of our achievements in environmental technology and management during the past quarter century. These have given us a tremendous competitive advantage which unfortunately, under current circumstances, we have not been able to use effectively, either in the interest of global environmental health or in our own economic interests.

Donald L. Connors is an environmental attorney in Boston and chair of the Environmental Business Council.

My Turn

GERRY E. STUDDS

Wasting chances in 'enviro-tech'

The now-you-see-it, now-you-don't performance of the Bush administration at the Earth Summit in Rio de Janeiro in June prompted daily headlines about wasted opportunities for environmental improvement.



STUDDS

Lost in the fine print, however, was the equally important story of missed business opportunities. While the Japanese and Germans got a jump on expanding their environmental industries to developing nations, the United States lost out.

The term is "enviro-tech": environmental technology. Once regarded as the quaint domain of a few eccentric scientists, the environmental technology field has exploded into a major economic sector dealing with energy and resource management issues around the globe.

Right now, our state is a world leader in environmental technologies. The industry had doubled from \$6.5 billion in sales in 1985 to more than \$13 billion five years later, and today provides jobs for more than 70,000 Bay Staters. Harvard economist Michael Porter rates environmental technology as one of Massachusetts' four major emerging business sectors.

But Massachusetts' - and America's - pre-eminent role in this growing field is in danger, primarily because we are not aggressively seeking business in burgeoning markets around the world.

With the end of the Cold War, Russia and Eastern Europe must not only clean up vast industrial waste left in the wake of communism, they must also revamp antiquated plants and equipment. Even larger environmental technology needs await in Asia, Africa and South America. Developing nations are expected to install a total of more than one trillion dollars worth of such technology over the next 15 years.

Many Massachusetts scientists and business leaders are working right now to meet these needs. From new, low-cost wastewater treatment to national leadership in photovoltaics technology, Massachusetts companies and labs are developing ground-breaking technology. But many of these advances are being made by small companies without the resources to chase down business in Madagascar or Montevideo.

Two weeks ago I introduced legislation to establish a National Environmental Business Foundation. It would be a federally chartered private foundation supported by both private and public funds - whose sole mission will be to open foreign markets to US environmental businesses. It would be staffed by a small, versatile group of business specialists charged with the task of identifying opportunities abroad for US environmental businesses.

Taken in concert with Rep. Joe Kennedy's bill to create an EPA-based Office of Environmental Technology to provide grants and loans for research and product development, the proposals represent important steps to help us compete with foreign environmental businesses.

What will this mean for Massachusetts? Hopefully, a great deal.

We have world class academic and research institutions - Woods Hole, Massachusetts Maritime Academy, Massachusetts Institute of Technology, just to name a few - unequaled in their expertise. We have regional business groups - like our Environmental Business Council - already promoting incredible technologies. They simply need help identifying markets.

With the Japanese government investing \$4 billion each year in environmental technologies, with the Europeans crisscrossing the globe in search of business opportunities, and with the Bush administration alienating scores of developing nations at the Earth Summit, we cannot sit still. Business opportunities are being snatched up by the minute. A National Environmental Business Foundation is one way to fight back.

► US Rep. Gerry E. Studds (D-Mass.) serves on the Energy & Commerce Committee.

Rio Summit Points Way to Envirotech

by Donald L. Connors

The decade of the 1990s has been characterized as one in which a revolutionary shift in global economic, political and strategic military power has led to a New World Order. With the fall of communism, the dissolution of the Soviet Union and the end of the Cold War, many national and global institutions are struggling to redefine their missions in order to remain relevant in a rapidly changing world where increasingly interdependent nations are tied together in a global economy.

As military competition wanes, the strategic importance of economic competition between nations and trading blocs will grow. In a global economy, trade barriers will continue to decline. Nations that compete successfully will do so by focusing on areas in which they have a competitive advantage. Industrialized nations and regions (such as the Northeast United States) can prosper in such an environment only if they continue to climb a ladder of value-added development in science and technology. Companies, universities and other institutions must excel in the global market or fall by the wayside.

August 24, 1992 - September 6, 1992

MASS HIGH TECH

The Northeast United States is home to world-class companies, universities and other institutions that focus on a wide variety of scientific and technological disciplines. One often overlooked cluster of competence in the region is in energy and the environment. Massachusetts alone is home to an estimated 1,000 energy and environmental companies employing 35,000 people. By some estimates, 2,500 such companies throughout New England employ well over 50,000 highly-skilled workers.

Moreover, many of the world's foremost universities and research institutions conduct energy and environmental research and development in scores of labs throughout the region. MIT, Harvard, Tufts, UMass, Woods Hole and numerous other institutions are known the world over for their academic and scientific excellence in the energy and environmental fields.

As evidenced by the Earth Summit in Rio de Janeiro in June of this year, global demand for energy and environmental know-how is growing at a rapid pace. According to William K. Reilly, administrator of the Environmental Protection Agency (EPA), the national market for "envirotech" goods and services exceeds \$100 billion annually. The international market is above \$200 billion and growing.

In order to foster the development of a competitive envirotech industry in the domestic and international marketplace to enhance and maintain a clean and productive environment, a number of environmental and energy companies, educational institutions and state government agencies have banded together to form the Environmental Business Council Inc. (EBC).

Headquartered in Boston, the EBC has gathered many member organizations from all sectors of the diverse envirotech industry. Most members are from the northeastern United States and Eastern Canada. Some are large; many are small and
(continued on page 17)

Envirotech

(continued from page 1)

young. The Council is growing rapidly and plans to extend its geographic scope as time and its resources allow.

To carry out its mission, the EBC has organized committees which offer programs ranging from seminars on international business development to human resource issues such as competitive compensation strategies in the workplace.

The Council's International Trade Committee has initiated projects in Latin America, particularly in Mexico; Eastern Europe and the Commonwealth of Independent States; the Far East and ASEAN regions; and, most recently, in Africa. The Committee seeks to identify markets for environmental and energy products and services and facilitate technology cooperation — i.e., the building of partnerships between envirotech organizations and industry, educational institution, firms and governments of other nations.

The EBC has established excellent working relationships with the United Nations Environment Programme, the U.S. Environmental Protection Agency, the U.S. Agency for International Development, and other federal and state agencies, especially in the Northeast, and with non-profit organizations having missions which complement its purposes.

The envirotech industry includes both manufacturing and service companies. Within these two main groups, the manufacturing sector includes: environmental equipment, such as air and water monitoring and cleaning devices; marine electronics and technology products; energy equipment including photovoltaic cells; and consumer and industrial products, such as recycled packaging goods. The service sector includes analytical services, such as laboratory or on-site testing facilities; energy or energy conservation consulting services; and professional and support services including law, accounting, financial and other business services. Finally, operational services, such as solid and hazardous waste treatment, storage, transportation and disposal, are within the service sector.

Educational institutions are an integral part of the industry and provide a vital source of personnel and research for the successful development of its various sectors.

EARTH SUMMIT INITIATIVES

In the U.S., the cultural focus on our citizens' health has influenced the development of the envirotech industry. However, the environmental field is primarily regulation-driven. The U.S. domestic environmental industry is a huge market that has been created by the adoption, since the late 1960s, of federal and state legislation requiring, among other things: (a) the assessment of environmental impacts of government-sponsored and private projects subject to government permitting, and (b) comprehensive programs in such areas as: air, water, and coastal zone management; hazardous waste, Superfund and contaminated site remediation; and natural resource protection including wetlands, endangered species and other critical resources. The prospects for the adoption of additional domestic environmental regulations are good.

International environmental law is in an early stage of development, and a number of political and trade-related factors will cause more countries to adopt and implement comprehensive environmental law and investment programs. Recent international developments suggest that the U.S. experience will strongly influence the form and substance of such laws. Increased public awareness of environmental issues and heightened corporate concern about catastrophes like Bhopal and super tanker shipwrecks accelerate the

demand for improved environmental management, which, in turn, creates a need for environmental goods and services.

The most influential of these factors are the actions taken at the U.N. Conference on the Environment and Development (UNCED — the "Earth Summit") in Rio de Janeiro. The gravity of environmental issues such as ozone depletion, transboundary disposal of hazardous waste, global warming, destruction of vital forestry resources and the like led to the international initiatives which were adopted there.

The 172 nations represented at UNCED took the following actions:

- Adopted by consensus Agenda 21, a detailed and comprehensive action plan for "sustainable development" that outlines specific recommendations on many environmental subjects from population growth to energy — it describes an ambitious program for nation-states to follow to achieve the objectives of a clean and healthy environment. (A 1987 report by the World Commission on the Environment and Development defined "sustainable development" as development or progress that "meets the needs of the present without compromising the ability of future generations to meet their own needs.")

- Directed the U.N. to establish this year a Sustainable Development Commission to oversee the implementation of Agenda 21. It will report to the Economic and Social Council of the U.N. on coordination matters and to the General Assembly on matters of substance. Periodic status reports are likely to be required, and a reorganized and better-funded United Nations Environmental Program is under consideration.

- Adopted a non-binding statement of 27 broad principles for guiding environmental policy that focuses on protection of the environment while nations seek to achieve economic development.

- Adopted a legally binding treaty (if ratified by sufficient member states) on safeguarding biological diversity and genetic resources and the sharing of their benefits. One hundred and fifty-three nations signed — not the U.S.

- Adopted a legally binding treaty (if sufficient member states act) on climate change — signed by 153 nations — not Malaysia.

- Adopted a statement of forest principles which is not binding, but which will likely serve as the basis for a future legally binding convention.

The international business opportunities for the envirotech industry created by those initiatives will be realized

by the sale of goods and services abroad and in business-to-business technology transfer and cooperation. The Business Council for Sustainable Development, an association of 50 CEOs of multi-national corporations organized to formulate a business perspective for the UNCED proceeding, supports the proposals for environmental technology cooperation contained in Agenda 21. The Business Council argues that technology cooperation is required to build the capacity of nations to provide a cleaner environment. Successful technology transfer will involve commercially beneficial cooperation between companies.

The EBC directors believe that many of the future business and job-creating arrangements proposed in Agenda 21 and supported by the council will involve U.S. envirotech companies.

Over time, the Rio initiatives and their progeny will influence nations and the business sector, leading to new laws, regulations and environmental investments. This will result in increased business for the envirotech industry if the necessary resources are mobilized so that the industry is able to take advantage of the global opportunity that is before us. As U.S. foreign aid focuses on environmental and economic rather than

military needs, our envirotech industry will gain additional strength in the global market.

NETA NEEDS

Recently, a proposal to establish a National Environmental Technologies Agency (NETA) has reached the Senate floor (Senate bill 2632). The new agency would be the instrumentality for research support for environmental technologies and applications. This pure and applied research would foster public and private partnerships in the development of environmental products and services for the domestic and international marketplace.

Members of the EBC see the proposal to establish NETA as an essential component in what must be a comprehensive, global strategy to assist the nations of the world in achieving environmental protection and sustainable development. We applaud the insight which led to this proposal and the concern for the human environment and our economy which shapes its purpose. We believe that the needs of the world for environmental and energy technology and expertise are great and that we in America are in a unique historic position to serve those needs.

We have recommended that the NETA mission statement be revised so that it will be directed to the global imperative of sustainable development, an idea which has acquired international standing and around which environment and development issues are being debated. The actions taken in Rio are designed to advance this principle, and markets will be created to serve demands of nations to achieve that goal. NETA will advance its purpose through supporting pure and applied research in the physical, natural and social sciences, energy conservation, in engineering and in technology transfer.

To support the participation of the American envirotech industry in the global environmental marketplace, we have also recommended that the proposal be amended to provide the following:

- First, the mission of the agency should be expanded to include environmental technology developments *worldwide*.

- Second, functions should be added that will permit the agency to assist the U.S. envirotech industry to serve and benefit from the growing world environmental marketplace.

- Third, the new agency should concern itself with the necessary economic policy, as well as management and legal issues that are important in developing

and serving the global market in environmental and energy goods and services.

•Fourth, the agency should have the ability and resources to assist private industry, non-profit organizations, and universities in environmental technology and management training globally.

If these elements were added to the legislation, we would have a comprehensive global strategy to assist the world in achieving environmental protection and sustainable development. This strategy would allow us to take full advantage of our achievements in environmental technology and management during the past quarter-century. These have given us a tremendous competitive advantage, which, unfortunately, under current circumstances we have not been able to use effectively either in the interest of global environmental health, or in our own economic interests.

We have also urged the Senate Committee on Governmental Affairs to bring to the NETA enterprise the advice of people who are experienced in the business of technology transfer. Experts in this activity can be found at universities such as the Massachusetts Institute of Technology, Stanford and the University of Michigan. Federal research institutions are another source of counsel. Professionals in the field have substantial background in transfer-

ring for commercial exploitation the technology that originates in research at their institutions. The private sector also has experienced managers who have used licensing, joint venture, patent and trade secret agreements, partnerships, etc. to share advanced environmental products and processes with companies and governments abroad. The Association of University Technology Managers, which counts as members some 700 university professionals and 300 technology transfer professionals from industry, could also be of substantial assistance.

ENVIRO-PEACE CORPS

I personally returned from Rio with a much heightened concern about global environmental problems. I was pleased that so many of the world's leaders, by their attendance there, expressed their commitment to the human environment and to forging the responses needed to assure a decent quality of life for present and future generations.

With the Rio conference has begun a process that will result in a new international environmental regime. That will take clearer form over the next few years as steps are taken by the United Nations and its member states to implement the decisions made at Rio. A new international environmental legal regime will emerge, and as it does it will create an unparalleled opportunity for America and our envirotech industry.

I also returned from Rio with a conviction, much stronger than when I left home in May, that the envirotech industry has an incredible opportunity both to be of service to the world and to create high-paying jobs. This will occur if we learn about and use information on new international developments which are quickly expanding the global market for environmental goods and services and education. We can connect our industry, research and academic institutions, our experienced state and federal environmental and energy agencies to satisfy that need.

In addition, I have recommended that the Congress establish an organization that could be of great value as nations strive to achieve sustainable development. It could also engage the energy, the experience and enthusiasm of our environmental professionals. Our many years' experience with environmental regulation and management have developed a competent corps of experienced environmental professionals. At present there is no effective mechanism to connect such individuals who would like to be of service to the environment as volunteers. It would be most productive if we would establish a volunteer corps — an "Environmental Peace Corps" — which would identify, train and disperse experienced environmental professionals to the nations of the world that request such assistance.

I have in mind here service not at the village level, but rather as advisors in more senior positions to government, industry, resource agencies, educational institutions and non-governmental organizations. We have the human resources in America to be of valuable assistance. And I know there are people who will serve if they can find the opportunity and receive the support and encouragement required to commit a portion of their lives in service of America and the environment. I have spoken to officials at the United Nations and the Environmental Protection Agency about this proposal. I hope such an initiative can be launched this year as part of America's response to the Earth Summit in Rio. □

Donald L. Connors is an environmental lawyer and a partner in the Boston law firm of Choate, Hall & Stewart. His practice is concentrated in the environmental and energy field. He also is co-founder and chairman of the Environmental Business Council, Boston

The 'greening' of Raytheon

Defense contractor's
might turns to
the environment

By Paul Hemp
CLARE STAFF

Raytheon Co. is attempting a major shift in its corporate focus, and in a significant way the defense giant's new priorities reflect the world's.

As the Cold War fades and as fears of global warming replace the threat of a nuclear holocaust, nations are moving resources once devoted to building military might into the battle against pollution.

Likewise, Raytheon - which as the nation's fifth-largest defense contractor is seriously threatened by declining military spending - is forging into new business areas related to the environment.

The Lexington-based company says it wants to triple the sales and profits of its existing environmental businesses over the next five years as part of a broader effort to equalize the size of its defense and nondefense operations.

The company also is considering a major acquisition in the field, chairman Dennis Picard said at last month's annual meeting. Although he didn't name a candidate, analysts say they believe it probably would be a business with sales of \$300 million to \$500 million.

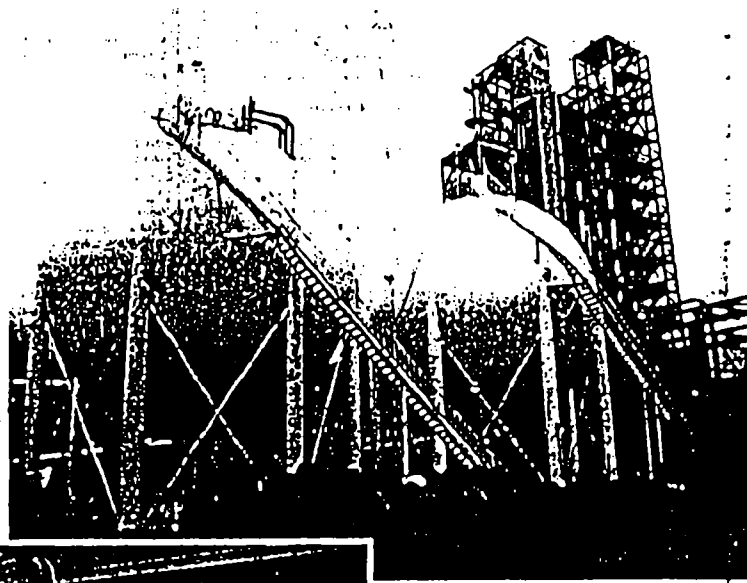
The importance of the environmental business to Raytheon's future is highlighted by recent hiring trends at the company. In the past year, the company's total work force has dropped to 66,600 from 74,800, including layoffs of 1,850 mostly defense workers in New England.

By contrast, Raytheon's Badger Co. engineering unit - much of whose work involves redesigning refineries to produce cleaner gasoline - has hired 600 people at its Cambridge headquarters during that period, bringing the work force there to 1,700. Across its entire operations, Badger has added 1,100 workers in the past 12 months and expects to hire up to another thousand in the next several years.

"The emphasis on growing this part of the business exists from the chairman on down," says George Sarney, the senior vice president who oversees the company's engineering and environmental operations.

Despite the shift in focus, Raytheon, the maker of the Patriot missile, still is primarily a defense company and will be for some time. Although nearly half of its sales come from longstanding commercial operations - including Beech aircraft and Amana appliances - nearly three-

Raytheon-owned Badger Co. designed this Louisiana plant to produce a substitute for chlorofluorocarbons, or CFCs.



Sarney: Focus on the environment "from the chairman on down."

quarters of its profits are defense-related, analysts estimate.

And environmental work still makes up only a fraction of Raytheon's overall business. The company's recently reorganized and renamed Energy and Environmental Group had 1991 operating income of \$125 million on sales of \$1.67 billion, just 12 percent of the total company operating income of \$1.64 billion on sales of \$9.27 billion.

Environmental business made up an even smaller per-

RAYTHEON, Page 85

After computers, a sector of hope

It sounds like a classic computer startup story.

Two years ago, Christopher Nagel, an MIT engineer, teamed up with William Haney, a young entrepreneur and, armed with a new idea and angel seed capital, they founded a company in an old law firm building in Cambridge.

But instead of circuit boards and semiconductors, the elements of their business are liquid steam and hazardous waste.

Nagel and Haney are the founders of Multiv Metal Technology Inc., a hazardous waste treatment firm and one of numerous companies that have sprouted up in Massachusetts in the past several years whose business is pollution control or cleanup.

Massachusetts, so-called environmental industries, comprising an estimated 1,300 companies with nearly 40,000 employees and at least \$9 billion in annual sales - is viewed by many as one of the best hopes for the state's economy, a smaller successor to the once-flourishing minicomputer industry.

"This is what Massachusetts does best," Haney says. "It serves as a breeding ground for technology-driven companies that are spun out of places like MIT."

Although the estimated 15 percent annual growth of

ENVIROTECH, Page 85

■ RAYTHEON

Continued from page B1
centage, about one-quarter of the new sector's sales, or \$400 million, Sarney says. The group - comprised of Badger, United Engineers & Constructors, Raytheon Service Co and Cedarapids Inc. - also is involved in the engineering and construction of big projects such as power plants.

Thus, the environmental business provides a growing alternative to government defense contracts - but hardly a safety net. "It's a promising area and they have a number of irons in the fire," says Calvin Rumohr, an analyst at Cowen & Co. in Boston. "But if the government business really goes, they will have a problem."

Whatever its ultimate position within the company, the environmental business is bound to grow, Raytheon officials say. New regulations such as the US Clean Air Act of 1990 and a heightened awareness of the dangers of pollution around the world bode well for environmental firms, they add.

Ironically, a lot of the new environmental contracts will come from the government - just as defense contracts always have. Even the Pentagon, Raytheon's longstanding customer, faces major environmental cleanup projects as bases and weapons facilities close.

"The fastest growing budget element is the Department of Defense today is not the B-2 bomber, it's not SDI, it's not Seawolf, it's environmental," says Patrick M. Roddy, president of Raytheon Service, whose work includes the management of environmental cleanup projects. "So although [Defense Department] dollars are contracting, that area is growing."

For example, the Army awarded United Engineers a \$429 million contract last year to operate a chemical weapons destruction facility on Johnston Atoll 800 miles southwest of Hawaii, which United Engineers helped design and construct. Other recent major United Engineer contracts include one from the Department of Energy to store hazardous wastes at the Hanford atomic site in Washington state.

"Uncle Sam has to spend a lot in this area," says Robert C. Mann, chairman and chief executive officer of Camp Dresser & McKee Inc., an environmental engineering firm that is a sometime Raytheon competitor but also a partner in a consulting venture in Europe with the company's Badger unit. "Raytheon has tremendous alliances with the government, knows all those people and how to do business with them."

Raytheon is currently building its environmental operations around two engineering businesses it acquired in the late 1960s, Badger and United Engineers. At that time, the company embarked upon a diversification strategy aimed at taking its engineer-driven corporate culture into the two growing energy-related industries of nuclear power and petroleum.

Badger specialized in the design and engineering of oil refineries and United Engineers specialized in nu-

clear power plants - including several years later, Seabrook. When the nuclear power industry crashed in the 1970s and the petroleum industry bottomed out in the mid 1980s, so did those Raytheon subsidiaries.

When environmental cleanup and pollution control regained prominence on the national and international agendas several years ago, Raytheon saw an opportunity to take the very engineering experience it had built up designing nuclear plants and oil refineries, and apply them to the new market.

For some time, says Peter Aerni, an analyst at First Boston Corp. in New York, the diversification strategy "didn't look so good, especially in the 1980s when the defense business was so strong. But looking back, they did the right thing."

The trend toward reducing pollution by designing controls into the manufacturing process particularly benefited the company, executives say.

"We have been successful in building an environmental business because we bring chemical engineering skills to the solution of environmental problems," says L.G. Modigliani, Badger's president and chief executive officer. "In the past, the environmental business was an end-of-the-pipe approach, but today the problem is attacked at the root."

Badger, 70 percent of whose work is outside the United States, has been involved in projects ranging from the design of a Louisiana plant to produce a chemical refrigerant less environmentally damaging than chlorofluorocarbons, or CFCs, to the development of a hazardous waste treatment facility in Thailand.

Philadelphia-based United Engineers has primarily been involved with the study and design of scrubber systems to reduce sulfur discharges at coal-fired power plants. Cedarapids of Iowa, a leader in the somewhat clunky and recently depressed road-building industry, has developed in conjunction with Badger a portable machine to reclaim petroleum-contaminated soil.

The success of its subsidiaries is likely to lead to further acquisitions in the environmental field. This year, Raytheon unsuccessfully bid for two defense-related businesses that General Dynamics Corp. had put on the block - its Conquest aircraft unit and its missile division. The failure to pick up those businesses means Raytheon's balance sheet is strong enough to make a substantial acquisition, the company says. Analysts say it probably would be an engineering firm - possibly a division of another company - with the potential to exploit the environmental market.

Such environmental work may seem a long way from making missiles. Raytheon's best-known business. But a complex engineering

project is similar to the massive defense contracts that Raytheon knows well, executives say.

"Building a large refinery or a power plant involves thousands of drawings and steps along the way, not unlike managing a Patriot program" or other defense systems contract, says Sarney.

Still, the culture of a company whose primary customer has been the government can sometimes seem a bit alien to executives dealing with private sector customers.

"I won't tell you that there hasn't been a learning curve at times to find a middle ground. Sometimes it's a little painful," says Charles Miller, president and chief executive officer of United Engineers. "But I've never hit a stone wall or been unable to get something done because of a bu-



PATRICK M. RODDY
Environmental dollars growing

resuscitate

"Overall, there has been a useful exchange of ideas on how to get a project done."

A sector of hope

■ ENVIROTECH

Continued from page B1

the industry in the past year has slowed to about 9 percent because of the sluggish economy, according to a study sponsored by the state Office of Environmental Affairs, the industry still sees plenty of opportunity.

Growing US environmental regulation, a morass of cleanup projects in Eastern Europe, Latin America and Asia and growing worldwide awareness of environmental issues promise healthy growth in the future, they say. Several Massachusetts companies were at the world environmental summit in Rio de Janeiro last week drumming up business.

In fact, many see exports as the area of long-term growth. "Those who seek to make a fortune in the environmental business will end up looking beyond the United States," says Walter Barber, president and chief executive officer of Groundwater Technology, a publicly traded Norwood company specializing in groundwater cleanup.

Massachusetts envirotech companies - many of them belonging to the 180-member Environmental Business Council - range from giants like defense contractor Raytheon Co to startups like Mollen Metals. They include engineering and consulting firms, hazardous waste management companies and makers of pollution measurement instru-

ment. And most have seen explosive growth in recent years. While Groundwater Technology's Barber sees the real growth potential outside the United States, his company hasn't done badly on the domestic front. Revenue has grown from \$14 million in 1984 to \$190 million in the fiscal year ended April 30.

Camp Dresser & McKee Inc., a privately held Cambridge environmental engineering firm with 2,400 employees, has been around since the 1940s. But in the last five years, revenue has jumped from \$14 million to \$268 million.

Mollen Metals, which has developed a method for breaking down hazardous wastes into recyclable elements by injecting them into a bath of molten iron heated to 7,000 degrees Fahrenheit, had \$1 million in sales in its first year of business and expects sales of \$9 million in \$12 million this year.

Boosters of the industry point out that by several measures the envirotech industry dwarfs the state's biotechnology industry, which has an estimated 15,000 employees and revenue - in its nascent stage - of less than \$100 million annually.

"Massachusetts has spent a bit of time cultivating and nurturing biotech companies," says Nancy of Mollen Metals. "Now it's up to the state to promote the envirotech industry."

By J. J. W.

Trade Pact vs. Environment: Clash at a House Hearing

By KEITH SCHNEIDER

Special to The New York Times

WASHINGTON, Sept. 15 — House Democrats and the Bush Administration clashed today over the environmental impact of the North American Free Trade Agreement, with lawmakers asserting that safeguards are inadequate and the Administration acknowledging that the treaty would prevent the United States from directly enforcing tough conservation rules in Mexico.

Under insistent questioning by Democratic members of the House Ways and Means Committee, William K. Reilly, the administrator of the Environmental Protection Agency, said that if Mexico chose to relax its environmental standards to attract American factories, "we have no direct recourse to apply sanctions to that company's products."

Mr. Reilly's statement came in the first of two Congressional hearings this week in which the Bush Adminis-

tration is expected to defend the proposed treaty against attacks by Democrats who say its environmental provisions are weak and will encourage manufacturers to exploit differences in the two countries' enforcement programs to gain a competitive advantage.

Immediately after the hearing, Robert T. Matsui, Democrat of California and a member of the Ways and Means trade subcommittee, said that unless the treaty was renegotiated to provide much stronger provisions for resolving environmental disputes, its chances for approval next year by the House are slim.

"Essentially, what the agreement now provides is a chance for Mexico to wink and not enforce its own laws and attract our businesses," Mr. Matsui said in an interview. "Right now, the only way to enforce environmental laws is through negotiations. That isn't enough, and we think that is a

Continued on Page D23

Continued From First Business Page

major issue that must be renegotiated."

Since June 1990, when the Administration indicated its strong desire to negotiate a free-trade agreement with Mexico, environmental groups have pushed to have their concerns addressed directly in the text of the accord. The White House and the United States trade representative, Carla A. Hills, resisted the pressure, saying that environmentalism had no proper place in considering new trade pacts.

But in May 1991, the Administration turned to five national environmental groups for support when it looked as though the House might defeat the legislation allowing the Administration to begin negotiating the pact. The National Wildlife Federation and the World Wildlife Fund subsequently helped in drawing up provisions in the accord. And the Administration acceded to demands from Mr. Reilly that the Environmental Protection Agency be allowed to advise American negotiators.

The accord, completed and made public last week, was touted by Mr. Reilly today as the "greatest trade treaty ever negotiated," and the "only one that contemplates specific sensitivity to environmental concerns."

A Central Campaign Issue

President Bush has cited the agreement as a centerpiece of his program to balance economic growth with environmental goals and has said it will benefit the American and Mexican economies. The agreement has generated strong support in Wall Street investment houses and the board-

rooms of most industrial corporations.

Gov. Bill Clinton, the Democratic Presidential candidate, has not decided whether to support or oppose the accord. Mr. Clinton and his running mate, Senator Al Gore of Tennessee, who is also an expert on international environmental issues, are coming under increasing pressure from environmental organizations, labor groups, farm organizations and small businesses to reject the agreement. These groups say free trade with Mexico will hurt conservation efforts and penalize workers by undermining United States protections for health, safety, the environment and wages.

"When you open up free trade between countries with unequal standards of living, there is a tendency to reach equilibrium in wages, health protections, and environmental regulations unless there is specific language to prevent this," said John Cavanagh, a fellow at the Institute for Policy Studies in Washington, who is helping to organize opposition to the pact. "That means our wages and standards go down or Mexico's go up. What is happening here is that this agreement gives all the rights to corporations without giving them any responsibility."

Labor Secretary Lynn Martin also appeared today to tell the Ways and Means Committee that the agreement would create more American jobs than it destroyed. But she steered clear of providing new figures for how many jobs might be lost.

Ms. Martin caused dismay within the Administration last week when she told the Senate Finance Committee that the program through which her department planned to help workers displaced by the agreement was based on studies showing that up to 150,000 workers could lose their jobs. These studies have also shown that new jobs would exceed the jobs lost.

Environmental Business Council

AGREEMENT

on a

PLAN OF COOPERATION

by and between

**CONFEDERACION DE CAMARAS INDUSTRIALES DE
LOS ESTADOS UNIDOS MEXICANOS (CONCAMIN)**

and

ENVIRONMENTAL BUSINESS COUNCIL INC. (EBC)

**March 3, 1992
Boston, Massachusetts**

WHEREAS CONCAMIN is an organization representing the entirety of Mexican industrial enterprises and has as one of its objectives to provide assistance to its member firms in achieving compliance with the environmental laws and regulations of the United States of Mexico; and

WHEREAS EBC is an association of environmental and energy firms, universities, and governmental agencies organized to assist its members with business development and the promotion of their programs and activities so that they may compete successfully in both domestic and international markets; and

WHEREAS, a major program of CONCAMIN is the development of industry in the United States of Mexico. CONCAMIN desires to ensure that firms establishing in the United States of Mexico are in full compliance with Mexican environmental laws and regulations, and utilize state-of-the-art environmental technologies; and

WHEREAS, CONCAMIN also wishes to encourage manufacturers of equipment, instruments, etc. and providers of services relating to protection of the environment to locate their facilities in the United States of Mexico; and

WHEREAS, EBC wishes to work with CONCAMIN and its member chambers and associations to the end that information pertaining to the capabilities and environmental technology of its members are made available to Mexican firms with the end of promoting joint business enterprises and of assisting Mexican firms in complying with environmental laws and regulations and of meeting their training and education needs.

WHEREAS, EBC and CONCAMIN with its member chambers and association wish to participate in identifying and implementing joint environmental business, research, education and training opportunities in their respective countries and in other regions of the world.

NOW, THEREFORE,

In recognition of the aforementioned mutual interests, the parties hereto do mutually agree as follows:

1. Objectives

The objectives of the cooperation between the parties shall be five-fold as set forth below:

- 1.1 To organize working and cooperative groups in specific sectors to undertake particular projects of collaboration; and**

- 1.2 To establish an academic development program for the training of technicians and professionals in the environmental field and to address the need to educate the existing workforce in the safe handling, use, and disposal of hazardous materials; and
- 1.3 To develop a network of environmental information in Mexico; and
- 1.4 To form a committee to develop technical environmental enterprises in Mexico; and
- 1.5 To design a program of technical cooperation that facilitates the transfer of clean technologies to Mexico and vice versa.

2. Implementation

CONCAMIN and EBC will initially form three joint working groups to develop detailed plans for the achievement of the objectives. These three working groups and the focus of each shall be as follows:

- A. A working group on education, training, and information exchange.
- B. A working group on technical cooperation and technology transfer.
- C. A working group on the development of technical environmental enterprises in Mexico.

3. Correspondence

To facilitate communications between the parties, all correspondence between the parties relating to this Agreement shall be directed as follows:

Correspondence to CONCAMIN:

**Confederacion de Camaras Industriales de
Los Estados Unidos Mexicanos (CONCAMIN)
M. Ma. Contreras 133-8
Cuauhtemoc, Cuauhtemoc
06597 Mexico, D.F.**

Attention:	C.P. Jesus Cevallos Gomez
	President
and	Federico M. Velez
	Vice President
Telephone:	(525) 5469053
Fax:	(525) 5356871

Correspondence to EBC:

Environmental Business Council, Inc.
Exchange Place
53 State Street, Suite 3400
Boston, Massachusetts 02109 U.S.A.

Attention: John N. Driscoll
President
and E. James Whitehead
Badger Engineers, Inc.
One Broadway
Cambridge, Massachusetts 02142
Telephone: (617) 367-0282
Fax: (617) 227-7566

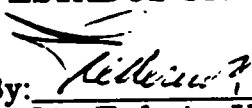
Direct correspondence between members of the working group are encouraged.

4. Entirety of Agreement

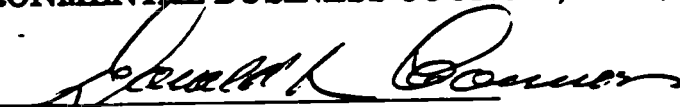
The agreement described herein constitutes the entirety of the agreement between the parties with the expectation that, once the working groups have completed their assignments that further agreements will be forthcoming on the implementation of the plans developed for the achievement of specific objectives.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement in the presence of the indicated witnesses.

**CONFEDERACION DE CAMARAS INDUSTRIALES DE
LOS ESTADOS UNIDOS MEXICANOS (CONCAMIN)**

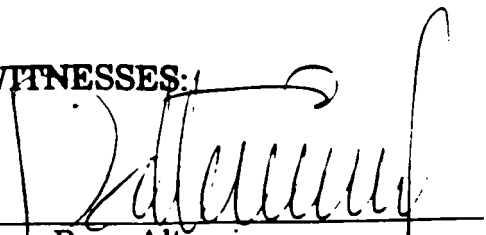
By: 
Lic. Federico Velez
Vice President

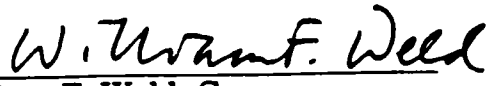
ENVIRONMENTAL BUSINESS COUNCIL, INC. (EBC)

By: 
Donald L. Connors, Esq.
Chairman

By: 
John N. Driscoll
President

WITNESSES:


Arq. Rene Altamirano
Director General, SEDUE

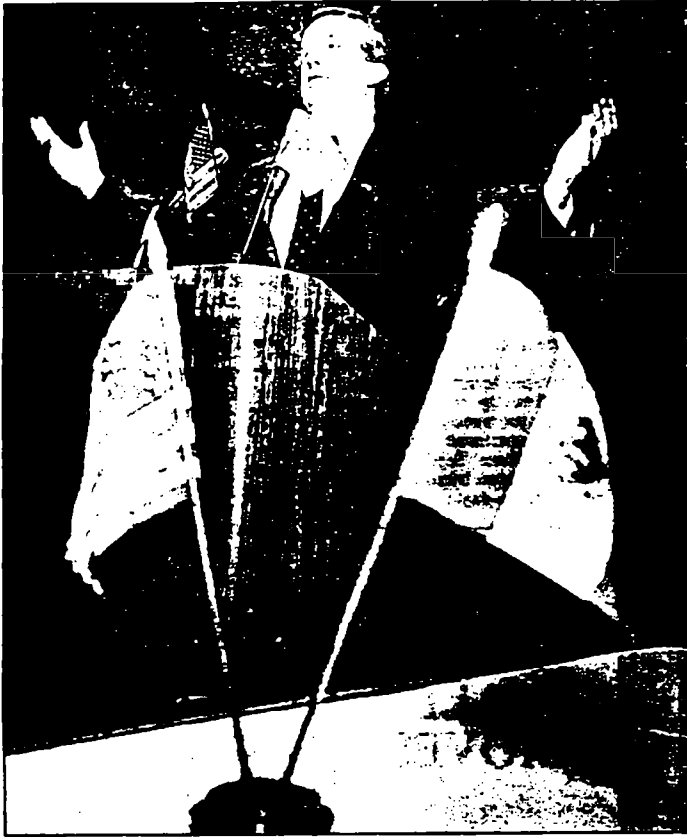

William F. Weld, Governor
Commonwealth of Massachusetts

March, 3, 1992
Boston, Massachusetts

BUSINESS

**STOCK
HOT LINE**
CALL THE BOSTON HERALD MONEY HOT LINE 1-900-454-6060

The 24-hour stock quote line that lets you spell out the name of your stock on your Touch-Tone phone in simple words, without having to remember or look up your stock symbol. Just 95 cents per minute. Stock quotes are 15 minutes behind actual trading and updated constantly through closing.



Staff photo by Nancy Lane

DEAL: Gov. William Weld addresses Mexican and American business people.

Massachusetts, Mexico linked by new agreement

By MARIE GENDRON

New England-based environmental companies hope to do more business in Mexico under an agreement signed yesterday by Gov. William Weld and other officials.

The "Plan of Cooperation" agreement with the Mexican Confederation of Industrial Chambers (CONCAMIN) was signed during a three-day conference on "Mexican Campaign for a Clean Environment" hosted by the 150-member Environmental Business Council of Boston.

"Although we in Massachusetts are geographically further removed from Mexico than most other states, I think our

technology brings us closer than most," Weld said.

Under the agreement, members of the council and CONCAMIN will create programs to improve environmental academic training and establish an environmental information network exchange between Mexico and the council. The deal stops short of any financial commitment by either group and does not specify a target amount for new contracts by council members.

The council said environmental and energy companies added nearly 18,000 new jobs to the Bay State economy in the last five years.

MASS HIGH TECH

Volume 10, Number 8 Mar. 9-22, 1992 \$1.50

NEW ENGLAND'S HIGH TECHNOLOGY NEWSPAPER

Enviro Council Inks Mexico Pollution Pact

Agreement calls for technology transfer and joint business ventures

by Patrick L. Porter

A meeting between Gov. William Weld and Mexican President Carlos Salinas last April in Boston, has culminated in a potentially far-reaching agreement involving environmental business and technology.

The agreement calls for development

of a broad range of educational programs, technology transfer and joint business ventures to help stop environmental pollution in Mexico.

The agreement was signed by representatives of the Massachusetts Environmental Business Council — a 180-member trade association — and the Confederación de Camara Industriales de

los Estados Unidos Mexicanos (CON-CAMIN), a national chamber of commerce representing some 80,000 Mexican companies.

A draft of the agreement was worked out last November when a trade mission from Massachusetts visited Mexico to learn first hand about the country's en-

(continued on page 9)

Goodbye Honda Hello Ford

by John H. Derby III

Have you ever seen the bumper sticker, "Think Globally, Act Locally?" Last week I decided it was time for me to act on a personal level. The problems of this economy, the resulting fear among business owners and employees, and the embarrassment caused by President George Bush's failed trip to Japan, has finally trickled down to me and my cars. After four Toyotas, one Nissan, three Hondas and four Subarus, including my month-old Legacy, it's good-bye Subaru, hello Ford.

After watching Bush become the laughing stock of Japanese business during the infamous Trip of Executives, and having since listened to the racist and holier-than-thou garbage coming from Japanese business and government leaders, I figure it's time to make a statement, both in writing and in the pocketbook.

When are we, America's business managers, going to come to our senses about what is taking place?

When a former Japanese trade minister makes inflammatory statements about U.S. auto workers goofing off on Fridays and Mondays, and when the current Prime Minister of Japan says, "American workers have come to lack a work ethic," it's come to the point when we, as business managers, really need to ask ourselves, "What am I going to do about this to effect some type of change?"

Let's make sure that we understand what has occurred. These statements, which are only micro-examples of the types of things that are taking place daily in Japan throughout the business environment, are not declarations to wage economic war. These are congratulatory statements about the fact that the war has been fought and America has lost. The Japanese clearly view their country, their economy, and their products as victors not just for today, but for the past 10 years, for the decade of the 1990s and far into the next century.

If you feel that you can sit back like before and rationalize these statements into something less harsh, less arrogant, less demeaning and less provocative, then I suggest you are not living in the real world of American business, with its shrinking markets, escalating costs, and its frightened and underutilized workforce. There is no way that statements like these, and hundreds of others which are taking place daily on Japanese talk radio and in the press, can be brushed off as the meaningless drivel of a few right-wing radicals. We are talking about the Prime Minister of Japan delivering a well-rehearsed speech.

In fact, if you read the business press in Japan, you will find frequent calls from an increasing number of powerful leaders in business and government insisting that Japan become much more assertive and that Japanese managers need to preach their success and their "economic difference" outside Japan even louder than before.

Let's look at the practices that make the Japanese "different" in their business dealings:

First, we recognize the incredibly strong alliances that exist in every business sector between Japanese government, banking and industry. These alliances, which have existed for



Donald Connors, Chairman of the Environmental Business Council, Gov. William Weld, and Rene Altamirano, SEDUE.

CEOs: Upturn Near, but Tax Bill is Killer

by Patrick L. Porter

Results are in from the Massachusetts High Technology Council's sixth annual CEO survey and, recession or not, there is plenty of good news to report.

Topping the list: More than half the council's CEOs (51 percent) say the business climate in the state is improving. Last year, only 8 percent said things were getting better. And the year before, as Massachusetts led the nation into recession, a mere 2 percent of thought the business climate was improving. If the survey continues to be an accurate barometer of the business climate, then the Massachusetts economy may be ready to roll.

In addition, while only 26 percent said the state's business climate was "holding steady" last year, now a healthy 36 percent believe the business environment has stabilized. In other words, 87 percent of the council's CEOs think things are okay or getting better, compared to only 34 percent last year and a dismal 20 percent the year prior. Moreover, only 13 percent of the CEOs now say the business climate is getting worse, down from 66 percent last year and 80 percent in the dark days of 1989-90.

Why are council's CEO so cheery? According to general counsel Christopher Anderson, most of the CEO's credit Gov. William Weld for bringing fiscal discipline back to state government, after many years on a spending binge. Some CEOs noted that even the state legislature had begun to exhibit some self control when it came to raising taxes and spending money. Other reasons cited for the improving business climate included reform of worker's compensation, passage of the research and development tax credit, repeal of the business services tax, higher education reform, passage of "school choice" legislation, and a pro-business attitude throughout the Weld administration.

of the state's next economic downturn have already been sewn by supporters of a ballot question that, if passed, could make Massachusetts among the most anti-business states in the nation.

The biggest threat to the economy, says Anderson, comes in the form of a corporate disclosure ballot question that would force publicly-traded companies, banks and insurance firms to reveal sensitive information about their state tax payments. The ballot question has been proposed by the Tax Equity Alliance of Massachusetts and is supported by public sector unions and human services contractors. According to James Braude, executive director of TEAM, the law is modeled after one in Wisconsin, the only state in the nation to require disclosure. The intent, says Braude, is to find out whether large, profitable corporations are paying their fair share of taxes. According to Anderson and other business leaders, the ballot question is simply a blunt political instrument with which to beat business over the head.

The ballot question is simply a blunt political instrument.

There are many instances in which a corporation might be a good public citizen and yet pay little or no taxes. For example, a corporation might be profitable but pay only the mandatory minimum state tax because it has a tax-loss carryforward from years when it lost money. Or a company might cut its taxes by taking tax credits for investing in R&D or in new plant and equipment. In both cases, a company could have a hard time explaining such sophisticated issues to an electorate that so often forms opinions based on shallow, headline news.

In addition, Anderson says the ballot

mation that competitors could use to undermine them in the marketplace. For example, companies would have to disclose heretofore secret information about their subsidiary operations, including net income, gross income, taxable net worth, taxable net income, as well as lists of all deductions, credits, exemptions, depreciation schedules and the like. In the case of company with a single facility organized as a subsidiary that manufactures one product — a situation not at all uncommon in high tech, says Anderson — corporate disclosure would be tantamount to handing over the books to any and all comers. With such information, competitors could reverse engineer that company's entire business strategy and then use that knowledge to kill it.

Says Anderson, no chief executive, or stockholder for that matter, could countenance such a situation. The stock market would almost certainly devalue any company with significant operations in the state. And anyone with an alternative would be wise to operate their business elsewhere.

And what of Braude's contention that Wisconsin's business climate was not damaged by corporate disclosure? Says Anderson, "TEAM's ballot question is not even a cousin of the Wisconsin tax law. The Wisconsin law applies to personal income taxes and all corporate returns. It only requires release of net taxable income. It doesn't require subsidiaries to disclose very sensitive investment data like the Braude proposal does."

In addition, Massachusetts policy makers already have all the information they need to make decisions about tax equity, says Anderson. "All of the information is publicly available in the aggregate, without company names. The Department of Revenue did a 143 page report which was the most complete analysis of corporate tax revenues ever done by the state. Jim Braude just wants

Mexico

(continued from page 1)

environmental woes. The mission included members of the state's Office of International Trade and the Environmental Business Council. It was organized by Thomas Boreiko, a long-time expert on North-South trade and head of the Lexington-based Consultants Group/Latin America.

Boreiko and his partners also organized last week's conference at the Colonnade Hotel in Boston. Executives from over 100 organizations paid several hundred dollars to attend. Speakers discussed the Mexican market for pollution-control equipment and a newly-passed Border Agreement between Mexico and the United States that envisions spending \$2 billion in the next 3 years to stem pollution along the 2,000 mile Mexico-U.S. border.

Nearly 9 million Mexicans live within 60 miles of the U.S., most of them in 14 cities that straddle the border. More than 2,000 foreign-owned manufacturing plants are located there and cause much of the air, water, and hazardous waste pollution. Most of the border plants are owned by American companies which are drawn to Mexico's low-cost labor.

However, even bigger environmental problems exist in the interior of Mexico, where most of the nation's 88 million people live. Mexico City, home to 20 million people, plans to spend \$4.6 billion to clean its air and water.

According to James Michel, assistant administrator for the Latin America & Caribbean Bureau of the U.S. Agency for International Development (USAID), the recently-signed Border Agreement and progress toward a North American Free Trade Agreement (NAFTA), mark a positive turning point in Mexican-American relations.

In the past, the two countries often clashed over divisive issues, said Michel, instead of finding solutions to shared problems. "I'm not sure what has changed the most in last 20 years, but I do know that the current agenda of U.S.-Mexico relations is far more collaborative, far more based on principles of mutual respect and mutual responsibility than has ever been the case in my experience," he said.

The result: rapidly increasing trade has made Mexico the United States' third largest trading partner after only Canada and Japan. Last year Mexico imported more than \$30 billion in goods and services from the United States, which enjoys a trade surplus with its southern neighbor. During the last 5 years, U.S. exports to Mexico have grown at an annual rate of 18 percent.

According to Michel, "Massachusetts alone has outpaced the national average. Exports to Mexico grew from \$100 million in 1987 to \$184 million in 1990. By the commonly used yardstick of 2,000 jobs [created] for each \$100 million in exports, that means exports to Mexico are supporting about 4,000 jobs right here in Massachusetts."

In part, Michel credits Mexico's 5 percent annual growth to the "sound fiscal policies" instituted by Mexican President Carlos Salinas.

"The dramatic growth in U.S.-Mexico trade over the last 5 years is to a large extent due to the impressive economic program that Mexico has adopted," said Michel. "The combination of the exchange-rate liberalization, sound fiscal policy and monetary discipline have restored stability. Trade and investment liberalization have attracted capital and technology. A very successful privatization program has reduced fiscal pressures while financing urgent social programs. A renegotiation of commercial debt has freed up resources while restoring confidence. And conclusion of the free-trade agreement will reinforce the significant gains of recent years and will show the way of the broader vision of hemispheric free trade that is embodied in the Enterprise for the Americas Initiative."

could halt further development, particularly along the U.S.-Mexico border. According to Timothy Atkeson, an assistant administrator of the Environmental Protection Agency, the border agreement is a long-term plan that will run for a decade or more. In the next few years, he said, as much as \$2 billion will be spent building wastewater treatment plants, drinking water systems, solid waste disposal and hazardous waste treatment facilities.

JAFFEE ON MARKETS

An attorney with 15 years experience in environmental law, Bennett Jaffee is director of environmental services for the Consultant's Group/Latin America.

Jaffee said Mexico's new general ecology law, passed in 1988, was superior to that of any developing nation. In addition, he said Mexico was implementing it far faster than the United States had implemented similar regulations in the 1970s.

Jaffee cautioned American business people to remember that Mexico is a very different market than what they are used to in the United States. "It's a very fluid and somewhat disorganized market," he said. "There is difficulty in securing accurate market information. There are no environmental newsletters to which you can easily subscribe to get

information."

Mexico is a market of 88 million people, he said. "It's bigger than quite a few of the Eastern European countries put together."

Although the border plan is getting all the attention, Jaffee said most of the market for environmental goods and services was in the interior. Mexico City has a population of 20 million people. The cities of Guadalajara and Monterrey also are large. Monterrey has over 3 million citizens.

"To really enter Mexico and do significant business in there you have to get beyond the border," he said. "It's a big country, a complex country, and should be approached in that way."

Jaffee said Mexico City's \$4.6 billion pollution-control program mandates such things as cleaner-burning fuel for cars, conversion to catalytic converters, and converting industry to clean fuels. He said Salinas has established a presidential commission to cut through red tape and institute radical programs to cut air pollution in Mexico City. One step calls for converting all public transport vehicles from conventional gasoline engines to natural gas and propane engines. "I've seen figures of 300,000 to 500,000 vehicles involved in that program," said Jaffee.

Water shortages and pollution is a

major problem. "About 10 percent of Mexico City's sewage gets treated and there is very little done about industrial sources," said Jaffee. "A new statute passed in 1991 to go into effect this October will assess fees on industrial wastewater discharges based on volume and on certain polluted water. It will allow companies the choice of polluting and paying or treating. We believe that is going to force business to install wastewater treatment facilities."

With water so scarce, Jaffee said, there was growing demand for systems that improve conservation and allow for reuse. In addition, SEDUE, the Mexican EPA, is looking to the private sector to build and operate large wastewater treatment facilities, not only on the border but in the interior.

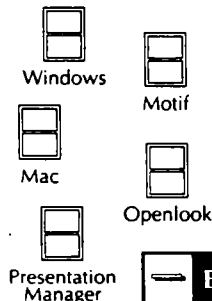
As for hazardous waste, Mexico does not have a Superfund program. Says Jaffee, "They are focusing on cleaning up current pollutant sources. There is no doubt that in the future hazardous waste sites will be attacked. But that is not a present-tense market. What is a present tense is the fact that only about 10 percent of the country's hazardous waste is properly disposed of. There is only one hazardous waste disposal facility currently operating in Mexico. □

Windows Client/Server Workshop

Conference Chairman
Jeff Tash

Boston
April 28-30, 1992

Test Driving Tools for the New Application Development Environments



See the Leading Tools in Action!

- ✓ See live product demos projected on a large screen.
- ✓ Walk through the entire application development process.
- ✓ Roll up your sleeves and test drive the latest software tools including: EASEL Workbench, PowerHouse, Ellipse, ObjectView, MDBS IV, ONTOS DB, FACETS, PowerBuilder, Advanced Revelation, Windows 4GL and CASE:W.

Educational Sessions by the Experts

- ✓ **Frameworks for Client/Server Computing**
by Conference Chairman Jeff Tash, Database Decisions
- ✓ **LAN Survival Guide**
by Larry DeBoever, Tucker/DeBoever Technologies
- ✓ **Integrating Client/Server and CASE**
by Pieter Mimmo, Technology Insight, Inc.
- ✓ **Client/Server Applications Development: A Management Framework**
by Theodore Klein, Boston Systems Group
- ✓ **Product Comparisons: Strengths, Weaknesses and Commentary**
by Conference Chairman Jeff Tash, Database Decisions
- ✓ **Effective GUI Design**
by Christine Comaford, Corporate Computing, Inc.
- ✓ **Dynamic Data Exchange (DDE) and Object Linking & Embedding (OLE)**
by Kim Crouse, Synaptix
- ✓ **Windows Networking: Using IPCs and RPCs**
by Greg Denenfield, Denenfield Systems Design
- ✓ **Beyond CUA: How to Set Effective GUI Design Standards**
by Christine Comaford, Corporate Computing, Inc.

Conference
Sponsor:



Co-Sponsors:

WINDOWS



Powersoft.
THE POWER IS YOURS

Revelation Technologies

ONTOS

Call (508) 470-3880
to register or receive a
complete brochure.

Don Connors Has a Global View of the Environment

Donald Connors is New England's top environmental lawyer. A well-known teacher and consultant who travels the international lecture circuit, Connors also finds time to work as a United Nations volunteer. One week he might stop off in Nairobi, Kenya to discuss environmental problems in Africa. Next, he might turn up at a conference in Romania where he is working on the pollution problems of the Black Sea.

Connors is a litigator and a good man to have on your side if a court battle looms. He advises politicians here and abroad on how to establish sensible environmental regulations. And he counsels corporate chiefs whose companies must comply with an ever tighter net of environmental laws.

A former U.S. Army Captain and tank battalion commander — he was the tactical nuclear weapons officer for his unit in Germany during the late 1950s and early 1960s — Connors has a keen sense of history. He marvels at the political changes taking place around the globe. He speaks eloquently about the opportunities they provide — both to serve and to profit. In particular, Connors believes that New England has an historic opportunity to stake its claim as the world's leader in environmental know-how. To help companies, universities and state governments take advantage of this opportunity, Connors has helped found the Environmental Business Council. After only one year in existence the EBC has grown to over 180 members, and it is growing still.

To learn more about this remarkable lawyer, Mass High Tech editor-in-chief Patrick Porter interviewed Connors at his office in the Boston law firm of Choate, Hall & Stewart. The interview took place on March 25.

MHT: You've spoken before about how the environmental industry was spawned in part by federal legislation. How did it happen?

CONNORS: It grew out of the National Environmental Policy Act, which was quickly followed by the Clean Air Act, the Clean Water Act, the Coastal Zone Management Act and other federal initiatives, including the Resource Conservation and Recovery Act. A lot of those laws were passed in the early 1970s at the national level. But the National Environmental Policy Act was the seminal event. My recollection is that it was passed in 1969.

That whole body of federal law initiated a like response at the state level. Many of the federal environmental statutes stimulate action by the states. They require a partnership between the federal and state agencies. So the Clean Air Act is largely administered pursuant to a state statute. But the state statute is nudged by and must meet standards set by federal law.

In any event, the field of conservation law changed its name and character to environmental law. I remember the first meeting of the 100 or so lawyers in America who were environmental lawyers. It was held in the late 1960s at a conference center in Virginia, called Airle House. That was the nucleus around which the practicing environmental bar came together.

Around that time, in about 1970-71, the first national environmental law conference was held in Washington. It was cosponsored by the Smithsonian Institution, the American Law Institute, and an environmental law think tank called the Environmental Law Institute.

MHT: You started out in conservation law and then these new federal laws were passed which compelled the states to pass similar laws. Suddenly business and industry found itself needing to comply with a whole raft of new legislation. That must really have changed the legal industry. Suddenly you had a lot more business clients than wealthy family trusts trying to protect wetlands.

CONNORS: That's right. The real focus of environmental law today, its principle activity, is the representation of enterprises. And those could be private business corporations, public corporations, non-profit corporations, authorities or whatever.

We help the enterprise make sure that it is complying with those laws. Therefore we do things like environmental auditing. Or in the case of transactions, whether they are sales of assets or sales of entities, or mortgages or financings of one kind or another, there is a process of due diligence to assure whoever it is that is going to be at risk that the laws are being complied with.

The field has grown because every time one turned around there was a brand new law. And a lot of it is new law that's been developed in Massachusetts. The core national statutes have not changed a whole lot. It's still the National Environmental Policy Act, Clean Air, Clean Water, Toxic Substances, the Resource Conservation and Recovery Act, the Federal Superfund, Coastal Zone Management, Safe Drinking Water Act and related statutes. There are some others, TOSAs and FIFRA, but the state has cooked up its own bucket of laws, which are not necessarily consistent.

MHT: And in Massachusetts sometimes a lot more strict?

CONNORS: A lot more strict. Yes.

MHT: Which gives business people a headache, I must say, because it puts companies at a disadvantage, competitively speaking.

CONNORS: Oh sure.

MHT: Although it also has its good side.

CONNORS: It creates an industry. And people really hadn't thought too much about this before the Environmental Business Council started to organize. The industry was created by the constant stream of new legislation.

MHT: When I last saw you speak in a public forum, during the Mexico Environmental Conference, something you said really piqued my interest. You said the Northeast United States was home to some of the leading environmental technology companies, and one of the reasons was that it was also the most strictly regulated region on earth.

CONNORS: It is. In the course of following my personal interests, and also from professional engagements lecturing and consulting, I've visited many places around the world. In the course of my travels I've gotten a fix on where the university complexes are. And I've learned about the state of environmental law and regulation around the world. For example, I was lecturing at a major international conference in Japan last year on the coastal problems of Sagami Bay which is south of Tokyo. They have enormous problems. Sagami Bay is a nearly dead resource. It once was a rich fishery for the people of that part of Tokyo. And it is their primary beach and recreational resource. Now it's nearly dead. Why? Because they don't have the body of laws that we have here to deal with clean water or clean air. They simply don't have it. We have a body of law that is more stringent than anything I have encountered anywhere. And that includes California.

California has very stringent laws with respect to air, but water is a different subject. They don't have the wetlands regulations we have. They don't have the array of our environmental standards and programs.

The idea of the Environmental Business Council grew out of my familiarity with what was going on in other places. I've lived with the environmental programs here and had to advise clients on how to bring themselves into compliance or how to know what those laws were. I learned that there's a lot of companies in this region. Companies that have grown

because of environmental regulation. They are filled with highly-skilled professionals who are out there providing services to people.

I was litigating important new cases in 1971-73 and I had so much trouble finding scientists who were qualified in wetlands and hydrology, and in air emissions. I didn't know anyone who knew how to do health risk assessment. Today in this region there are a lot of experts in all of those fields — fields that didn't even exist 15 years ago. Risk assessment, in particular, is an important new scientific discipline in service of environmental law. It was created because of our environmental legal system.

When you combine the great intellectual resources of our educational institutions with the physical quality of this region as a place to live — because it attracts a lot of very able people — and you add to that the interest of our state government, not only in advancing high standards of environmental protection but in advancing the industry, you have quite an extraordinary resource.

MHT: Some business people seem to resent the forest of environmental regulations and the continuing pressure on their companies. Others take it in stride. You talk to a lot of executives of big companies. What is their level of consciousness and sensitivity to the environment? What kind of feeling do you get for their attitudes now as compared to 20 years ago?

CONNORS: The attitude today is very much more accepting of the reality, which is that environmental laws and regulations are here and it's better to find out what they are and make sure you understand them and are meeting their requirements than it is to fight with them.

Now there has been developed a new discipline called corporate environmental manager or environmental compliance and engineering officer. There's a body of highly skilled technical people who have come out of our universities. The companies are paying a lot of attention to the issue because it has become such that good management includes good environmental management. I have been told that by executives in companies from around the world. That's a dramatic change in attitude.

Now, there has been another motivator. The other motivator is that the courts have been quick to impose sanctions on people who dump hazardous material into the sewer system, for example. MWRA has had some success in that. There are people in this region who have gone to jail because they violated the environmental laws by passing contaminants, hazardous waste, into publicly-owned treatment works or into the ground. Word gets around. Executives don't want to find themselves on the front page of the newspaper for that kind of activity.

So there is a much higher sensitivity to that body of law, acceptance of it as a body of law, and willingness to respond to its imperatives.

On the other side, we have a body of law in Massachusetts that is very hard for most people to deal with. To use wetlands as an example, there is a way that you identify a particular body of land that might have some water on it as a wetland. The state has a different rule from the federal government. And the local governments have different definitions. It's crazy. If you are going to permit under the federal law, it's not good enough to get you through the state or the local government system. And if you go through the state and the local government systems, guess what? Your appeal process from the primary decision is different in each case. What's a person to do? There ought to be a vertical integration of the systems of environmental regulations.

That, by the way, is not nearly the same problem in the clean air or clean

water context.

MHT: By being ahead of the game companies here maybe suffered competitively a bit because they've had a higher cost of doing business. On the other hand, they've developed the management expertise, the procedures and the technology to deal with these issues. Now that other regions of the country and the world are beginning to institute their own tough regulations, New England-based companies are well positioned. Is that pretty much the picture?

CONNORS: I think that's clearly so. It's one of the organizing principles behind the Environmental Business Council.

MHT: How did the EBC come into being? I know there were meetings before the Dukakis trade mission to Europe in 1990, but you became aware of the wide range of environmental companies, consultants and university programs here during your 20 years working in the industry. That's why you saw the opportunity.

CONNORS: That's right. And also travelling to other parts of the world and discovering that other regions did not have our resources.

MHT: So you would come back here to find them?

CONNORS: That's right. And I found these wonderfully talented people that we have, whether it's at MIT or Harvard or other institutions. The awareness that there is a special body of people and knowledge here came to me because of my experience in not only working with the people here, the experts at the universities, but also from seeing their absence in other parts of the world and in other parts of America.

I think that gives us a significant competitive advantage because there are people here who know not only how to write laws and regulations, but who can provide policy analyses and who are expert in all of the scientific disciplines — air, land and water — to help you comply.

The University of Massachusetts at Lowell has a very active technical training program for in-plant environmental managers. Tufts University has a very well-developed environmental technical compliance, training and education program. MIT runs a very important international environmental compliance offering. The entire Massachusetts state university system has a terrific collection of programs. They are known in other places around the world for their environmental engineering skills. Again, it's part of our competitive advantage.

MHT: The EBC is barely a year old. Tell me the story from your point of view.

CONNORS: The EBC had its origins in a meeting of people around the Dukakis administration's energy and environment export initiative. You know that I went to Europe with some energy and environmental companies and there was a meeting held before that.

MHT: The mission was in September of 1990, I believe.

CONNORS: Yes. I was a participant in that program.

MHT: And you took part in the seminars leading up to that?

CONNORS: Yes. And it came to me one day that there in that one room we had a cross section of the entire environmental industry. And if the environmental industry was going to make effective connections to other parts of the world, where I knew a need existed because I had been to those places, then the industry had to be brought together in some way.

So I spoke to the governor and to some other people there — Al Raine and Rebecca Callahan in particular — and said we ought to see if those companies thought it appropriate to come together as a group to help the industry gain

Connors

(continued from page 3)

higher levels of identification and to speak on behalf of the industry more effectively with state and federal government, and see if we could do whatever was needed to grow and prosper this industry, including international trade opportunities.

After the governor had his trade mission, we captured some of the participants on the mission and asked them would they like to help us. And to my incredible good fortune, Jack Driscoll [president of HNU Systems and of the EBC] walked in and we were all set. We were off and running.

Jack has been an outstanding leader and contributor. We held some planning meetings and had a lot of support from the previous administration. Al Raine and the governor were both very interested. John DeVillars, the former environmental affairs secretary, was interested and supportive. We held a collection of meetings, decided that it ought to be an organization, that it ought to be called the Environmental Business Council — because we thought regionally, not just locally of Rt. 128 — and we selected a board of directors that quite well represents the industry. There are manufacturers of energy and en-

vironmental products, environmental service companies, financial advisors, a big accounting firm, two educational institutions — it's really important if we are to fully exploit this industry and the worldwide opportunities that we have the universities there with us in a collaborative public-private venture.

MHT: And it helps foster technology transfer.

CONNORS: Yes. In technology transfer it's important to get organizations and people from various sectors to know each other. An lo' and behold, a faculty member at Tufts now has an opportunity to provide research assistance to a company because the right people met at an EBC activity.

So we organized the board. I was elected as the chairman and Jack Driscoll as the president and we have been busily engaged in trying to provide the identity for the industry.

MHT: There are many sides to the environmental industry.

CONNORS: Yes. It's a very complex and very large industry. So we tried as best we could with a lot of inquiry to see if we could put a shape to the industry, to see who is in it. We organized committees to provide activities in particular areas: business development, international trade, technology transfer. We are particularly interested in putting

research from universities into commercial exploitation. That is a fundamental purpose of the EBC. And we have specialized committees in energy. There is a very large energy, and energy conservation industry in New England. Our energy conservation products and services are the broadest in America.

MHT: No natural resources, but a lot of know how.

CONNORS: Yes. The Conservation Law Foundation which has been so active with the New England Electric System and the public utility regulators, tells me there are people from all over the world who are in touch with our energy industry here, asking for advice and assistance in developing energy conservation programs. That's a New England-based industry, which I think is just fascinating.

We have other specialized committees — including one that focuses on solid waste, where we have a lot of experience. Another industry sectors of particular interest to us is marine science and technology. I was in Nairobi, Kenya, a month-and-a-half ago, where I was advising the United Nations as a volunteer. I was visiting with them and was told by Peter Schroeder, who is head of the ocean and coastal area activities center for the United Nations environmental program, that

the leading marine science and technology institution in the world is in Massachusetts at the Woods Hole Oceanographic Institution. That institution is so highly respected globally that it stands out like a beacon.

MHT: A marine technology industry has sprung up on Aquidneck Island in Rhode Island.

CONNORS: That's right. We are launching a major initiative to create a special committee in the EBC for the marine science and technology industry around here. We are having a breakfast meeting at the Mass. Maritime Commission in April. Rep. Gerry Snudds is going to be the next chairman of the merchant marine and fisheries committee in the House, which means from a marine science and technology point of view you just can't have a more important person.

The marine science and technology committee will develop outreach programs that will be helpful to the industry. We have Battel Ocean Sciences, located in Duxbury, one of the leading research, consulting and educational institutions in marine sciences. We have Woods Hole, the Marine Biology Laboratory, and MIT Sea Grant. The University of Massachusetts has an extraordinary interdisciplinary environmental sciences program. We have the programs in Oceanography and Marine Science at the University of Massachusetts. We have the Center of Excellence. We have URI and Mass. Maritime. It's just incredible. And a cluster of companies has come together because we have these institutions. That's what your quasi-namesake Michael Porter is always advancing, these clusters of competence.

I'm working with the United Nations and with some colleagues here and in the Netherlands to develop an international training ability in integrated coastal management. The world's environmental problems are absolutely staggering. And guess where a lot of the people are who likely will be in the middle of this integrated coastal management training institute that will teach people and advise them throughout the world? Right here in New England! I think that's pretty exciting stuff.

MHT: One of the things that always struck me about the EBC is that right from the beginning it was internationally focused. Tell me about the Mexico Environmental Conference which was held in Boston last month. That was a very impressive conference. When did you go to Mexico?

CONNORS: The end of October, early November. A group of EBC members and officers went to Mexico because we were convinced that was the way to understand how to connect the environmental competence here to the needs in Mexico.

We met Tom Boreiko of Consultants Group Latin America and Tom helped us organize the trip. He arranged meetings at very high levels with the senior staff people at the Mexico EPA (SEDUE), with officials from the City of Mexico, with people at the universities, with the head of Mexico's Oceanographic Operations, and with leaders of the industry sectors. We met various chambers of commerce...

MHT: ...And with the Chamber of all chambers...

CONNORS: ...Called CONCAMIN. And we met also with citizen activists. We had an extraordinary experience. We came as a mission that had state government, the universities, environmental companies, manufacturers — and a lawyer who knows something about environmental law. It was a breathtaking experience to see the need and the commitment of the people of Mexico, and to meet their industrial leaders who are dealing with the environmental problems of the country. They are clearly committed, from president Salinas on down. They want to

(continued on page 21)

Progress Can Be Yours With The Thousands Of Ideas Waiting For You At

NATIONAL ELECTRONIC PACKAGING AND PRODUCTION CONFERENCE
NEPCON EAST '92

Conference: June 15-18, 1992 ■ Exposition: June 16-18, 1992
Boyside Exposition Center ■ Boston, Massachusetts

At NEPCON East '92 you'll find everything you need for the design, manufacture and test of printed circuit boards. Attend NEPCON East '92 and see first-hand the thousands of ideas waiting for your electronics manufacturing team.

You'll find exciting ideas on how you can:

- Shorten your time to market
- Lower your production costs
- Start a Six-Sigma Quality program
- Increase your efficiency with concurrent engineering
- Improve your SMT manufacturing operations

Whether you discover them when you attend the Conference Program or find them in the over 350 exhibiting companies - GREAT IDEAS wait you at NEPCON East '92!

Make plans to attend NEPCON East '92 NOW!...Clip this coupon TODAY to receive your pre-registration materials right away!

For more information contact:
Connors Exposition Group
Connors Plaza
1350 East Touhy Avenue
P.O. Box 5060
Des Plaines, IL 60017-5060
Tel: (708) 299-9311
FAX: (708) 635-1571



© Reed Publishing Co. S.A. Inc. 1992



Clip and mail to:
NEPCON East '92 Connors Exposition Group
1350 East Touhy Avenue, Des Plaines, IL 60018
Please rush me pre-registration materials for NEPCON East '92!

Name _____
Title _____
Company _____
Address _____ M/S _____
City _____ State _____ ZIP _____
Country _____
Phone _____ FAX _____

My company is interested in exhibiting in future NEPCON events.
Please contact me at:

For more information contact: NEPCON East '92 c/o Connors
Exposition Group, 1350 East Touhy Avenue, Des Plaines, IL 60018
Phone (708) 299-9311 FAX (708) 635-1571 L2

Connors

(continued from page 16)

negotiate a North American Free Trade Agreement and they know that the quid pro quo is going to be to meet world standards of environmental law and implementation. But it's the people of Mexico who also are saying they want a better environment. It isn't just driven by NAFTA. It is a cultural change. And that cultural change is occurring around the globe. That's certainly happening in the European community. Laws are being passed on a regular basis. I get access to all the legal developments in these countries.

MHT: When the Berlin Wall came tumbling down we found out just how deep an environmental crisis existed in Eastern Europe. Clearly there is grassroots support for much stricter environmental regulation. Of course, it's a long-term market because they don't have money.

CONNORS: But Jack Driscoll will tell you that his company gets orders from that region. He's made some sales there and he has others in the offing. Also, enormous sums of money are being made available in that region, both by U.S. institutions and by the European Bank for Reconstruction, among others.

Most recently, I was working in Bulgaria on the problem of contamination of the Black Sea. I was participating in an international conference. Most of the participants were scientists from the regions of the riparian nations around the Black Sea — Turkey, Bulgaria, Rumania, Ukraine and the like. The Black Sea has a big problem and this conference was designed to try to put a fix on its environmental problems and then make proposals that would be coordinated through the United Nations Regional Seas program to secure funding from the World Bank's United Nations Environmental Program, which is called the Global Environmental Facility. The GEF has just made a \$10 million commitment to fund regional programs for managing environmental problems of the Black Sea.

There are going to be resources. There is a multinational initiative on the Danube River. I was recently in Hungary working on the problem of the great dam on the Danube that has been so controversial. There is a regional environmental center there. Resources are being brought in. So there is a market.

And the upcoming UN conference on the environment and development in Rio de Janeiro, whether it results in the signing of a document that is now known as Agenda 21 — which sets forth a charter for the world on the environment — or even if it doesn't get signed, the fact that the conference is being held and that thousands of people will be there participating means that the environment gets put way up to the top of the public agenda.

MHT: And the world's ability to deal with it also is enhanced.

CONNORS: That's right, by changes in financial allocation. And guess where the resources are to respond to that need? They are located right here in New England.

MHT: We are sitting on an incredible new growth industry.

CONNORS: We're sitting on it right here. And the job of the EBC is to help the companies here to be successful. We have a task force that we're starting within the week on financing the environmental company. That task force will consult with the state agencies and all of the banks in the area. Between Jack and myself we have met with all of the key banks.

MHT: Because the bankers need to learn how the businesses work and how to value them in order to justify loans and assess risk?

CONNORS: Yes. And what the market is like, where it is, and how it is growing, and what are its prospects? The banks all want to know. We're not just knocking on their doors saying,

"Please will you come?" The banks are interested in this industry.

Because we have done this basic learning about the problems, we are now ready to proceed not only with the lending, but with raising money through public offerings, all of which we do here in my office on a daily basis — advising environmental, energy and marine sciences companies.

MHT: Let's go back to Mexico. You went down there, got the lay of the land, had a number of meetings, and as you were leaving the people from CONCAMIN came to you and suggested a formal agreement to cooperate. They gave you a draft proposal. You brought it back to New England and this conference transpired.

CONNORS: As soon as we came back we organized a committee headed by Jim Whitehead at Badger, a marvelous person. And working closely with him is professor Jack Archer of the University of Massachusetts environmental sciences program. Jack is a lawyer and an international authority on coastal and ocean management issues — a very well respected person globally. Jack jumped into it and between Jim and Jack they organized a committee and worked in preparation for the conference and the other events that we had in addition to the con-

ference. They negotiated the terms of the agreement, the collaboration between EBC and CONCAMIN, which involved education and training, technology transfer and technical advice and support — and helping Mexico create an environmental industry through identifying people who would be interested in joint ventures, in co-investments, and in U.S. companies wanting to invest in Mexican companies. We are also, by the way, just as interested in finding out what those companies in Mexico might be interested in doing up here. It's really intended to be a bilateral arrangement.

We executed the agreement at the conference and we had other sessions. We had a wonderful planning session the day before the conference with our Mexican guests, and the day after we had a business partnering program with them. Now, subsequent to the conference we went down to Washington DC, where we met with the U.S. Agency for International Development program director for Latin America, Jim Michel. He brought all the key USAID people together in a room and we spent several hours talking about our initiative and what we were doing and how we could collaborate with USAID. We left there with directions from Jim Michel as to who to deal with to make sure that

USAID was cooperating with us and helping us in whatever way they could, which is a wonderful thing to have happen because most of us don't deal with these federal agencies on a day to day basis.

MHT: It's nice to have the head person instructing his staff to get things done.

CONNORS: That's very helpful. A week ago today we spent 6 hours with the head of policy, Dan Esty, deputy assistant administrator from the office of policy planning and evaluation. The U.S. EPA came to Boston to visit us! It's one of the few times I can remember in my years practicing environmental law.

MHT: Usually one gets summoned to Washington?

CONNORS: (laughs) Or the client gets a "love letter" saying "You did something you shouldn't have."

It was a wonderful experience. Dan Esty came up in preparation for a meeting we have with the senior staff of U.S. EPA on April 6, during which a group of us will again talk about our initiatives in Mexico.

Esty brought along July Belaga, who is the Region I U.S. EPA head. And of course we had people from state government because they are really interested in what we're doing. We had the most

(continued on page 23)



The Most Comprehensive Pen Event of the Year!

Call (508) 470-3880
to register or receive more information.

Pen-Based Computing Conference

Boston / May 4-5, 1992

Keynote Presentations

Pen Computers: A New Metaphor for Computing
By Conference Chairman, Ed Yourdon, "American Programmer"

Pen Computing: A Whole New World of Computing — Again!
By Portia Isaacson, Dream Machine Incorporated

Survey of Pen Products: Understanding Where You Fit In
By Kirk Cruikshank, GRID Systems Corp.

Market Size Track

The Pen-Based Computing Marketplace
By Amy D. Wohl, Wohl Associates

The Pen Market: Success and Growth Factors
By David R. Larson, Notable Technologies

Hardware Track

Putting Pens into the Picture: From Hardware to User Interface / By Dr. John Butler, Microsoft Corporation

Handwriting Recognition for Pen Computers
By Dr. David Fox, Nestor, Inc.

User/Application Track

Developing and Implementing a Pen-Based Application
By Theodore C. Standish, Gillette North Atlantic Group

PANEL — Developing Pen Solutions: The Untold Story
MODERATOR: Daniel Mexick, Linc Systems

DEMO PANEL — Product "Snapshots"
MODERATOR: Bruce A. Stephen, IDC

Software Track

PANEL — OS Wars: Microsoft vs. GO: Which is Better?
MODERATOR: Esther Dyson, EDventure Holdings

Developing Pen-Based Solutions
By George M. Barlow, Distributed Micro Systems

Management Issues Track

Management Issues in Evaluating Pen Computer Systems
By Chuck Ennis, TelePad Corporation

Integrating Pen-based Computing with the Rest of Enterprise Computing
By Mark Skapinker, Delrina Technology, Inc.

Communications Track

Survey of Current Pen Technology
By Kevin Mankin, Momenta International

Networking on the GO: Connectivity for the Mobile Professional
By Lucia Hicks-Williams, Sitka Corporation

Live Product Demos by:

GO Corp.
GRID Systems
NCR
Notable Technologies
MOMENTA
Scriptel

Conference Sponsor:



Digital Consulting, Inc.

Co-Sponsors:

PC WORLD



notable



MOMENTA



Scriptel CORPORATION

PENTOP

PEN VISION
The Newsletter of Pen-Based Computing

VAR Herald

(continued from page 21)

CONNORS: USAID has given a grant to the Office of International Trade for the purpose of doing some environmental technical training in Poland. That happened because Jack went down and said we're interested in being helpful and supportive. The Mexico initiative is the learning place in a lot of ways for us. We want to do the same thing in Eastern Europe and the CIS. And we want to do something similar in the European Community. We have another group that is coming together around opportunities in the European Community and the ASEAN nations. We think China, Japan and Korea repre-

CONNORS: That's right. Think of the major global issues — take the coastal problems for moment. Peter Shroeder who is head of the United Nations Oceans and Coastal Area Activity Center, an extraordinarily talented and very sophisticated person, says to me, "Don, there are 3.5 billion people on the planet today who live within 80 kilometers of the shore around the globe. Thirty years from now, 7 billion people are going to live in that same area. If something isn't done to plan for that growth, we're headed for a global environmental catastrophe on just that one issue."

MHT: What are your immediate

We have an ongoing and growing array of programs. ☐

Your company can also benefit from exhibiting its products to Electro's prime audience of highly-qualified decision makers. For more information about attending or exhibiting in Electro/92,

A global opportunity for our envirotech industry

by DONALD L. CONNORS

As evidenced by the recent Earth Summit in Rio de Janeiro, there now exists a rapidly expanding global market for environmental goods and services that offers enormous job creation potential. In New England alone the envirotech industry employed in excess of 50,000 people in the first quarter of 1992; more than 1 million people are employed nationwide. We in America are uniquely qualified to service this emerging market. The prospects for rapid growth of the industry will be realized only if we seize this opportunity to coordinate the available resources to understand the market and meet its needs.

The envirotech industry includes environmental and energy companies that manufacture products or provide services, as well as educational institutions and government entities. It has, for a considerable period of time, existed in relative obscurity. There exists in our region a high concentration of businesses providing goods and services that protect and monitor the quality of the human environment. Our world-class universities, vigorous environmental regulatory policies and enforcement, sophisticated high-technology manufacturing and environmental service companies, and highly skilled labor force and capable management all give us a competitive advantage. But if we don't use it, we will surely lose it.

The focus on our citizens' health, increased public awareness of environmental issues, and heightened corporate concern about catastrophes such as Bhopal, the Exxon Valdez oil spill and the recent disaster in Guadalajara accelerate the need for improved environmental management. This in turn increases the demand for environmental and energy goods and services. The U.S. domestic environmental industry is huge, already more than \$100 billion a year, and has largely been created by the adoption since the late '60s of federal and state environmental legislation. The prospects for the adoption of additional domestic environmental regulations are good.

International environmental regulation is in an earlier stage of development, and a number of political and trade-related factors such as the North American Free Trade Agreement will likely persuade more countries to adopt and implement comprehensive environmental law and investment programs. Environmental regulations, health protection and disaster prevention together create the global environmental market, now estimated to exceed \$250 billion annually and growing rapidly.

A factor in its future growth is the initiatives adopted by the 172 nations represented at the Earth Summit. These actions dealt with issues such as ozone depletion, disposal of hazardous waste, global warming, destruction of vital forestry resources, profound pollution of coastal lands and waters, and the very survival of the human



photo by Stuart Garfield

If we don't use it, our region's advantage in environmental technology will soon go to waste.

species. Collectively, the initiatives will shape the new international environmental legal regime that was launched at Rio.

Over time, the Rio initiatives and their progeny will lead to new environmental regulations and a favorable climate for environmental investments. This will result in increased business for the U.S. envirotech industry if the necessary resources are mobilized so that the industry is able to understand and take advantage of the global opportunity that lies ahead of us.

A consortium for the global environment must be quickly formed by the envirotech industry, federal and state governments, educational institutions, and other environmental organizations providing services in law, career planning and corporate environmental management. This compact, funded by public and private resources, will connect with relevant national and international environmental interests, including the United Nations. In addition to U.S. environmental policy initiatives, it will allow America to become the world leader in implementing the Rio initiatives, thereby building the U.S. envirotech industry and creating good jobs.

The elements of this strategy are clear. First, the federal government should immediately redirect a portion of our public investment into environmental and energy technology and its transfer for the benefit of us and the world. Legislation related to this purpose was recently filed by U.S. Sen. Barbara Mikulski (D-Md.).

Second, this undertaking must have sufficient resources to perform the research necessary to understand and, where appropriate, to advise others implementing the emerging international environmental regime. It should be encouraged, if requested, to advise nations and other interests about our considerable national experience in the implementation of environmental law and the practice of environmental management.

A third element is that the strategy should concern itself with the necessary economic policy—that is, the development of the global market in environmental and energy goods and services.

Finally, the government should assist private industry, nonprofit organizations and educational institutions in providing environmental technology and management training globally.

If we do these things, we will have a comprehensive global strategy to assist the world in achieving environmental protection and sustainable development. This strategy will also allow us to take full advantage of our achievements in environmental technology and management during the past quarter century. These have given us a tremendous competitive advantage which unfortunately, under current circumstances, we have not been able to use effectively, either in the interest of global environmental health or in our own economic interests.

Donald L. Connors is an environmental attorney in Boston and chair of the Environmental Business Council.



GUEST EDITORIAL

The editor's page

Reflections on the Earth Summit

By Jack Driscoll

I attended the Earth Summit (held June 3-14, 1992, in Rio de Janeiro, Brazil) as the President of the Environmental Business Council (EBC), an accredited Non-Government Organization (NGO) to the Summit. The EBC is a regional (New England) trade association (200 members) of environmental and energy companies, universities, and government agencies that was organized in late 1990. Our goals are to foster the development of an effective envirotech industry for enhancing and maintaining a clean and productive environment nationally, regionally, and globally. The EBC's programs include environmental training, technology transfer, and business development.

■ On Sunday evening, June 7, Don Connors, EBC Chairman, and I were invited to a reception sponsored by the Senate delegation, which included Senators Gore, Kerry, and Chafee. The purpose was to discuss starting an Earth Room in Brazil by donating an eight-foot globe constructed from 3000 satellite photographs taken on cloudless nights, and a software program generated from satellite data that can be used for environmental studies. We had some discussions concerning the negative publicity generated by the U.S. through its refusal to sign a number of treaties that should have been negotiated during Procon and then polished during the Summit. The U.S. had an ideal opportunity to take the lead in the environmental area. It is not very often that a country can put hundreds of millions of dollars on the table and come out looking this bad. Many of the countries were surprised, since they had been looking to the U.S. for leadership in environmental areas.

"This apparent lack of leadership on the part of the U.S. may mean that the Summit will turn out many good things instead of many great things," replied Senator Kerry in his address to Congress on June 16, 1992, after his return from Rio. Senator Kerry held a press conference on June 17, 1992, at HNU Systems (Newton, MA) to emphasize that the passing of laws to protect the environment does create jobs.

Mr. Driscoll is a founding President of the Environmental Business Council, Boston, Massachusetts, U.S.A., and the founding President of HNU Systems, Inc., Newton, Massachusetts.

■ There were about 1300 NGOs from all over the world, with about 360 from North America. A maximum of two attendees were allowed per NGO and about 2000 people participated with NGOs, from the Alliance to Save Energy to the YWCA. There were very few business-oriented groups there, which I found quite surprising.

The Global Forum was the conference for the NGOs. There were hundreds of exhibitors and a number of simultaneous sessions held on various environmental topics. U.S. EPA Chief Reilly spent a day at the Forum and said that he had a better time there than at the Summit, where he was criticized for the U.S.'s lack of support for a global policy.

The meetings of the U.N. delegates were held at RioCentro and the NGOs were allowed to attend most press conferences and the G77 (developing countries) presentations. Typically, the latter talks involved the need to forgive third-world debt, additional funds or payments to maintain rain forests and biodiversity (debt for nature), and help with sustainable development, including technology transfer.

Population control was one of the most important topics at the Summit. It has taken more than 10,000 years to reach a population of 2.5 billion (1950) and only 40 years to double that population. Over the next 35 years the population in the developed countries is expected to remain fairly stable at three billion, while the population in the developing countries is expected to double to five billion. Since the majority of the increase in the Earth's population will come from the developing countries, the increased demands on the Earth's resources will clearly worsen environmental problems. Many of the speeches, including a lecture by Jacques Cousteau, stressed this theme.

The Brazilian government had a display at RioCentro with about 20 booths to demonstrate the government programs in such areas as energy, ecology, rain forests, and steel manufacturing. Each of the 178 participating countries had an office (booth) with representatives, although there was so much going on, it was difficult to arrange a specific meeting with an ambassador or member of a delegation. It was easier to meet people in between meetings or in the hotel lobby. In a ten-minute period, while waiting for my bags, I met the Prime Min-

ister of Norway and five other heads of state. The negotiations concerning biological diversity, climate control, Agenda 21, etc., were closed to all but U.N. delegates. The importance of the Summit cannot be overemphasized when one considers that this is the first time such a large gathering of heads of state (117) has occurred.

■ All the participants at the Summit were encouraged to sign the Earth Pledge. UNESCO has obtained more than nine million signatures from 40 different countries.

Another important development at the Summit was Agenda 21. The degree of acceptance of this agreement may determine the future of our children and grandchildren. Agenda 21 incorporates six themes: 1) revitalization of growth with sustainability; 2) a dual approach to alleviate poverty, in combination with changes in lifestyle of the rich nations toward improving conservation and sustainable development; 3) management of human settlements in a manner that improves the quality of life and reduces environmental risks; 4) making efficient use of the earth's resources, reverse the destruction of renewable resources, and implement strategies for the sustainable use of the land, fresh water, biological resources, and energy; 5) action programs dealing with the atmosphere, oceans, and seas, as well as with living marine resources; and 6) reducing waste generation, recycling waste into productive activities, and finding safe ways to dispose of waste.

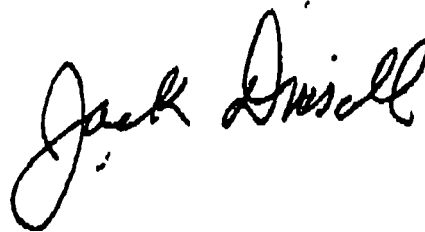
A very important question is: Where will the money come from? Some Europeans prefer a fuel tax of \$3/barrel; other developed countries want to donate 0.7% of their Gross National Product. At present, Denmark is the only country meeting this goal. Much of the success of this program in the short term will depend on how the economies of the G7 nations perform during the current economic slowdown and how quickly they come out of the present recession.

■ A meeting is planned in London next year to determine how to implement the guidelines of the Summit. It is clear that we cannot wait another 20 years. In 1995, another Summit is planned to track the progress of Agenda 21 and other critical issues that surfaced at the Summit.

I left the Summit with a much better understanding of just how serious our problems are on a global scale, the enormity of the task it will be to make Agenda 21 a success, and the fact that it will work only if we all participate. Maurice Strong, Secretary General of the Conference, must be very pleased with the outcome of three years of planning and negotiations.

During my trip home, I started thinking about how we can reduce waste at HNU Systems and use recycled

materials in more of our manufactured goods. We are already in the process of implementing a program with our local utility, Boston Edison, to reduce energy consumption at our facility.



Good news for the envirotech industry

Tom Mashberg ("Free trade with Mexico," July 19) did not discuss the impact of the North American Free Trade Agreement on the envirotech industry. One important aspect of the agreement is that industry in Mexico will have to conform to US environmental standards within three to five years. Today, the Mexican environmental industry is too small (less than a hundred companies) to service the more than 125,000 industrial companies.

This represents a tremendous opportunity for US (New England) environmental companies interested in doing business there. It is clear that Mexico is serious about solving environmental problems, since the government has closed more than 1,000 plants permanently and in-

creased its environmental budget eightfold since 1989.

The Environmental Business Council signed a plan of cooperation in March with Concamin in Mexico, which is designed to provide training, technology transfer and business development activities between New England companies and universities and Mexican companies and universities.

The adoption of of the Free Trade Agreement will increase jobs in the envirotech and other high-tech industries in Massachusetts, and by exporting labor-intensive jobs to Mexico, we will also increase the competitiveness of our industries globally.

JOHN DRISCOLL, president
Environmental Business Council

*Boston Globe 8/6/92 Boston
Letters-to-the-editor*

ENVIROTECH IN NEW ENGLAND

JOHN DRISCOLL

Envirotech" is a recently coined buzzword for the growing environmental/energy industry. The field itself, however, is older than many people think. Harry Truman was president when the Los Angeles Air Pollution Control District was formed to deal with the severe photochemical smog plaguing the Los Angeles basin. (Though smog is still a problem, one might ask whether Los Angeles would even be livable today if it had not enforced strict standards many years ago.)

Nearly a half-century later, an increasing number of New England companies are identifying themselves with envirotech. Last summer, the Massachusetts Office of International Trade published a directory of about 200 envirotech companies in Massachusetts. The Environmental Business Council, formed last fall, now has identified nearly 1,500 Bay State envirotech companies, many of them small firms with fewer than 50 employees.

To understand
worldwide demand
for envirotech products
and services, stand on
a street corner in
Budapest and try to
keep from coughing
when the light changes.

It appears that more than 30,000 people are employed in envirotech in Massachusetts alone. Assuming the Bay State is home to two-thirds of New England's environmental companies, the six-state region may host nearly 2,500 such companies, accounting for more than 40,000 New England jobs.

One striking aspect of this industry is that it is still growing by 25 percent to 30 percent annually despite soft economic times. A chief reason: Environmental products and services are in high demand on the export market.

To understand this demand, one need only stand on a street corner in Budapest and try to keep from coughing when the light changes. Most of that city's automobiles were built in what was the East Bloc, often running on dirty two-cycle engines with no pollution controls.

Regulation-driven

The environmental field is regulation-driven. Because the United States leads in environmental regulations, U.S. environmental companies have an edge in world markets.

The United States began regulating the environment in earnest in the early 1970s. A study completed in 1970 for the newly formed U.S. Environmental Protection Agency (EPA) concluded that 41 percent of Americans were drinking "inferior" water. This study provided a catalyst for the 1972 Clean Water Act, which set water-quality standards for all bodies of surface water, required sewage treatment and limited industrial effluents.

In 1976, stories started appearing in the media about statistically significant health problems such as miscarriages and cancer in the Love Canal area near Buffalo, N.Y. It was found that chemical companies had dumped barrels of hazardous waste there during the 1940s. The land was filled in and subsequently used for housing. Twenty years later, the barrels corroded and the waste permeated soil, groundwater and homes. As a result of the publicity surrounding the Love Canal disaster and similarly polluted sites discovered throughout the country, Congress passed the Comprehensive Environmental Response Compensation and Liability Act, now known as Superfund, which governs cleanup of hazardous-waste sites.

Most federal regulation and enforcement in the 1970s and 1980s focused on "clean water" and tighter automobile emission standards. After many unsuccessful attempts, Congress last year passed amendments to the Clean Air Act, indicating a new emphasis on clean air.

The states also have passed environmental laws and regulations with varying intensity. Massachusetts and Connecticut, for example, are among the handful of states that have passed their own hazardous-waste laws for commercial real estate.

Not surprisingly, two of the states with the strictest local environmental standards — California and Mas-

sachusetts — are hotbeds of emerging environmental companies. Witness Taiwan's decision to send representatives to Massachusetts as part of its "Buy American" program, which this year specifically targets environmental products and services.

Heavy regulation, however, is not the only reason New England is poised to lead the country in envirotech. Envirotech firms will find in New England an already-solid export base; the region accounts for about 6 percent of U.S. exports of all products. Plus, the region's concentration of colleges and universi-



Can envirotech pull New England out of recession? Cleanup workers use an HNU hydrocarbon monitor to survey a hazardous-waste site.

Photo courtesy of Ecology and Environment Inc.

The growth of envirotech will help stem the recessionary tide and provide jobs for many of the region's highly qualified college graduates. But the projected addition of 4,000 envirotech manufacturing jobs and 8,000 envirotech service jobs in New England is quite small compared with the total number of jobs lost in 1990 in the region's manufacturing and service sectors. To pull out of recession and get back on track, we need help from the real-

Envirotech's economic role can be bolstered through regional efforts.

estate market, construction, banking, high tech, software, biotech and many other traditional businesses in the region. No one business sector can do it all.

Envirotech's economic role, however, can be bolstered through regional efforts. Given the present state of diminishing resources — both natural and economic — representatives of the envirotech industry are urging regional development of a large export market to drive this technology. Regional cooperation can boost envirotech's growth rate, help our balance of payments and, if we

focus on energy conservation, lessen our dependence on foreign oil.

There are many things we can do better as a region than as individual states, including developing export markets; forging closer cooperation among universities and envirotech companies; coordinating environmental regulations (after all, one state's emissions quickly become another state's problem); and developing regional hazardous-waste disposal sites or incinerators.

We have precedent for this kind of regional action in, for example, the New England River Basins Commission and the New England Board of Higher Education.

In Massachusetts, the Environmental Business Council is working with state environmental affairs officials to develop a list of environmental resources in business and academia. A similar effort undertaken on a regionwide basis could mark the beginning of regional cooperation in this vital industry. □

John Driscoll is founder and president of HNU Systems, a Newton, Mass., manufacturer of instruments for monitoring hydrocarbons, pesticides and heavy metals in air, water, soil and food.

R&D EXPENDITURES IN ENVIRONMENTAL SCIENCES AT NEW ENGLAND COLLEGES AND UNIVERSITIES: 1988

(Institutions ranked among top 100 in the United States)

Institutions	Environmental Science Expenditure*	National Rank
Woods Hole Oceanographic Institution	\$47,100,000	3rd
University of Rhode Island	15,048,000	15th
Massachusetts Institute of Technology	11,716,000	22nd
University of New Hampshire	6,847,000	35th
Harvard University	6,073,000	41st
University of Massachusetts	5,715,000	43rd
University of Connecticut	4,574,000	49th
Brown University	4,118,000	56th
Tufts University	2,941,000	65th
Yale University	2,241,000	76th
University of Maine	1,630,000	88th
Wentworth Institute of Technology	1,457,000	93rd
Total for New England institutions among top 100.	\$109,460,000	
Total for all New England institutions:	\$110,665,000	

* Rounded to nearest 1,000

Source: National Science Foundation, Academic Science/Engineering R&D Funds, FY 1988