
CANADIAN INSTITUTE FOR ENVIRONMENTAL LAW & POLICY

517 College Street, Suite 400, Toronto, Ontario M6G 4A2 (416) 923-3529 FAX (416) 923-5949

Commentary on the Virtual Elimination Task Force Draft Final Report

Mark S. Winfield, Ph.D
Director of Research
Canadian Institute for Environmental Law and Policy

May 1993

I. Introduction

The Canadian Institute for Environmental Law and Policy was pleased to be invited to comment on the Draft Final Report of the Virtual Elimination Task Force of the International Joint Commission. The Draft Final Report is remarkable for its comprehensiveness and scope. The Report outlines a long-term structural framework for the virtual elimination of persistent toxic substances from the Great Lakes in a manner consistent with the goals of the Great Lakes Water Quality Agreement of 1978.

The Report's establishment of connections between the long-term environmental and economic costs of the discharge of persistent toxic substances into the environment is particularly noteworthy. "Environmental deficits" of this nature have tended to be ignored by traditional economic analyses of environmental policy issues.¹ The introduction of this concept provides the basis for linking the environmental externalities associated with industrial processes with their macro-level implications for environmental and economic sustainability.

II. Conceptual Approach (Chapter 6)

The Draft Report outlines the key factors in the failure of the traditional "pollution control" approach to the regulation of toxic chemicals. These have included "effects-based" models of standard setting which have required "proof of harm" to initiate regulatory action.² In addition, the conventional management and control model has assumed the existence of assimilative capacities within the environment. A wide body of research undertaken over the past 30 years supports the conclusion that such an approach is inappropriate in the case of persistent toxic chemicals. The traditional "single-media" model has also been problematic. It has

1

VF:
CANADIAN INSTITUTE FOR
ENVIRONMENTAL LAW AND POLICY.
Commentary on the Virtual
Elimination Task Force ...RN10971



frequently resulted in the transfer of pollutants between media, rather than their elimination.³

As a consequence of these considerations, we strongly support a shift from the traditional "pollution control" approach to one which focuses on "pollution prevention." The pollution prevention model places much greater emphasis on process changes as opposed to "end of pipe" technologies. It has been widely noted that this approach is not only much more effective from an environmental standpoint, but can also result in substantial cost savings to the affected firms in the long run. This is often a consequence of increased overall efficiency in resource use.⁴ As the Draft Report notes, these environmental and economic considerations lead to the wider question of the character of models of industrial activity which are environmentally and economically sustainable. This macro-level, sustainable development context is generally missing from traditional micro-level analyses of environment/economy issues.

CIELAP's support for a shift to a pollution prevention approach was reflected in the results of the Institute's 1988-1992 Program for Zero Discharge, a joint project undertaken with the United States National Wildlife Federation.⁵ In addition, we strongly endorse the adoption of precautionary, reverse onus and cross-media approaches in standard setting. As for the policy process through which these principles will be implemented, the involvement of all stakeholders will continue to be critical to the development of an environmentally and economically sustainable economic structure in the Great Lakes Region.

In terms of the components of the virtual elimination strategy, the Draft Report departs significantly from past approaches in proposing to focus not only on the elimination of direct discharges of persistent toxic substances into the environment, but also on the formation and use of persistent toxic substances throughout the production cycle. This includes proposals to "sunset" the use of certain substances through immediate bans for some priority substances and reduced use and eventual phase-outs, with interim treatment and control measures, for others.

A "use-tree" approach is proposed to provide guidance in terms of the most appropriate points of intervention to ensure the elimination of persistent toxics, while taking into account the need to consider social and economic factors. This aspect of the process will require careful consideration, as the structure of the strategy proposed in the Draft Report implies significant long-term capital commitments to process and material use change by the affected industrial sectors. A strategy for remedial actions for persistent toxic chemicals which have already been released into the environment is also outlined. This will be a critical component of the virtual elimination program.

III. Regulatory Structure (Chapter 9)

Chapter 9 of the Draft Report notes the growing consensus on the need to shift from a pollution control to a pollution prevention approach to environmental regulation and attempts to begin to deal with this question in terms of its implications for regulatory design. In a binational sense, the Draft Report describes the need for the harmonization of release inventories in Canada and the United States, for a permit and approval registry for the Great Lakes and a bilateral sunset chemical process. These will all be important steps in the implementation of a virtual elimination strategy.

In addition, the Draft Report notes the need for a pollution prevention and elimination regime in each Great Lakes jurisdiction. These pollution prevention and elimination regimes are to include sunset chemical components, toxic use reduction targets and pollution prevention planning and reporting systems. The precise design of these systems will require more detailed development, as they will entail significant shifts in the traditional approach of Canadian and American environmental protection agencies to the implementation and administration of environmental protection standards.

In particular, they will necessitate a shift from the traditional "design" standard approach to one which emphasizes "performance" standards. The traditional approach has emphasized the prescription of site specific, end-of-pipe technology requirements.⁶ The performance standard approach, alternatively, emphasizes "technological flexibility." and is intended to give firms the freedom to innovate as they redesign internal processes to meet rising environmental requirements.⁷ The importance of this model is further reinforced by the consideration that regulators generally lack the resources and expertise to prescribe specific changes in production processes within individuals plants when developing pollution prevention programs.

IV. Environmental Technologies (Chapter 10)

As the Draft Report notes, technological innovation will be a critical component of the virtual elimination strategy. This will include the development of new analytic and remediation technologies. In addition, the establishment of new process technologies, either by industrial enterprises themselves, or by environmental technology services sector firms which provide services to small- and medium-sized firms with limited in-house research and development capacity of their own, will be essential to the industrial transition implicit in the virtual elimination strategy. The latter approach appears to be widely employed in certain European jurisdictions, particularly the Federal German Republic,⁸ where it provides a strategic environmental and economic

role for the environmental industries services sector.

These potential roles of environmental technologies and an environmental services industrial sector are critical points of linkage between environmental and industrial policy. Environmental technologies and specialized firms in the field will play a central part in the restructuring of industrial societies for environmental and economic sustainability. Programs to support environmental technology development have been introduced by most Canadian governments over the past three years. However many of these programs continue to focus on traditional control technologies.⁹ A greater emphasis on the facilitation of process changes will be necessary if the full environmental and economic potential of the linkage between environmental and industrial policy is to be realized.

V. Economic Instruments (Chapter 11)

The Draft Final Report includes a brief discussion of the use of economic instruments as part of a virtual elimination strategy. When dealing with persistent toxic substances, economic instruments, if employed at all, must be used as a supplement to, and not a replacement for, the regulatory regime. As the Task Force notes, certain forms of instruments, such as input taxes may be particularly useful in providing additional incentives to industry to reduce the use of persistent toxic chemicals in production processes. However, as the Ontario Fair Tax Commission's Environment and Taxation Group reported, the point of imposition of such taxes in the production process must be considered carefully in order to maximize their effectiveness.¹⁰

The Draft Final Report's discussion of the use of emission trading schemes as part of its strategy is cryptic at best. It should be noted that the employment of emission trading systems within the OECD has been limited to the United States, and that their use is highly controversial. Trading schemes have not been employed regarding toxic emissions.¹¹ Trading systems in general suffer from a number of serious limitations, including their complexity, their potential to lead to local degradations of environmental quality, the difficulties inherent in monitoring their performance, and their inability to ensure environmental protection.¹² Consequently, their use should not be considered as part of a virtual elimination strategy for persistent toxic chemicals in the Great Lakes Region.

VI. Conclusions

The Virtual Elimination Task Force's Draft Final Report is remarkable for its scope and comprehensiveness. The Draft Report outlines an ambitious strategy to address the problem of persistent

toxic chemicals in the Great Lakes. The proposals to eliminate not only the direct discharge of persistent toxics to Great Lakes waters, but also the production and use of these chemicals are particularly noteworthy in this sense. The Task Force's efforts to begin to connect the virtual elimination issue to the wider question of the restructuring of industrial economies for environmental and economic sustainability are also critically important.

As the Task Force notes, this will require the establishment of significant linkages between environmental and industrial policy, especially in the development of remedial technologies and the new, zero discharge, processes. A number of jurisdictions on both sides of the border have begun to take initial steps in this regard. This has been evident in the creation of environmental technology development support programs, and the creation of pollution prevention/clean technology centres to assist in technology diffusion. However, many of these programs are at a preliminary stage, and will require further refinement to be fully effective.

The Task Force's Draft Report also has significant implications in terms of regulatory design. The need for a shift from a "pollution control" approach to one which emphasizes "pollution prevention" in environmental protection is increasingly widely accepted. However, the precise requirements of this transition are still in a process of being worked through in detail. Clearly performance standards involving bans and phase-outs will be important components.

CIELAP is pleased to see that the International Joint Commission is considering such an ambitious and forward-looking approach to the problem of persistent toxics in the environment. For its part, the Institute intends to follow-up its Program for Zero Discharge work with detailed investigations of the means by which environmental and industrial policy can be linked more effectively. This will include the examination of the regulatory implications of the adoption of a pollution prevention approach to environmental protection, and an assessment of the potential role environmental technologies and services in the establishment of sustainable environmental and economic structures in the Great Lakes Region.

Endnotes

1. See, for example, R. Repetto, Wasting Assets: Natural Resources in National Income Accounts (Washington: World Resources Institute, 1989) and H. Daly and J. Cobb, For the Common Good: Redirecting the Economy Toward Community, the Environment and a Sustainable Future (Boston: Beacon Press, 1989), Parts 1 and 2.

2. For a general critique of this approach to standard setting see R.B. Gibson, Control Orders and Industrial Pollution Control in Ontario (Toronto: Canadian Environmental Law Research Foundation 1983).

3. For a general discussion of this problem see D.P. Emond, "Environmental Policy: A Retrospective Examination of the Canadian Experience," in I. Bernier and A. Lajoie, eds., Consumer Protection, Environmental Law and Corporate Power, (Toronto: University of Toronto Press, 1985), p. 122.

4. This view was first articulated in North America in the late 1970s. See, for example, M.G. Royston, Pollution Prevention Pays, (Elmsford, N.Y.: Pergamon Press, 1979), and W. Glenn and M. Campbell, Profit From Pollution Prevention, (Toronto: Pollution Probe Foundation, 1982). More recently see D. Huisingh, L. Martin, Helaine Leiger, and N. Seldman, Proven Profits from Pollution Prevention, (Washington D.C.: The Institute for Local Self-Reliance, 1985); K.U. Oldenburg and Joel S. Hirschhorn, "Waste Reduction: A New Strategy to Avoid Pollution," Environment, March 1987, pp. 16-45; D. Huisingh, "Cleaner technologies through process modifications, material substitutions and ecologically based ethical values," Industry and Environment, UNEP 12(1) Jan/Feb/March 1989, pp. 4-8; M. Porter, The Competitive Advantage of Nations, (New York: The Free Press, 1991), p. 585; M. Porter and the Monitor Company, Canada at the Crossroads: The Reality of a New Competitive Environment, (Ottawa: Business Council on National Issues and Minister of Supply and Services, 1991), pp. 244-250; and S. M. Meyer, Environmentalism and Economic Prosperity: Testing the Environmental Impact Hypothesis, (Cambridge, Mass.: Department of Political Science, Massachusetts Institute of Technology, October 1992).

5. See A Prescription for Healthy Great Lakes: Report of the Program for Zero Discharge, (Ann Arbor and Toronto: National Wildlife Federation and the Canadian Institute for Environmental Law and Policy, 1991), S. Sang, Developing Options for Technology Based Standards for the Petroleum Refining Sector in the Great Lakes Basin, (Toronto: Canadian Institute for Environmental Law and Policy, 1991) and S. Sang and B. Mausberg, Developing Options for Technology Based Standards for the Pulp and Paper Sector in the Great Lakes, (Toronto: Canadian Institute for Environmental Law and Policy, 1992).

6. For a general discussion of this approach see K. Webb, Pollution Control in Canada: The Regulatory Approach in the 1980's, (Ottawa: Law Reform Commission of Canada, 1988).

7. "More effective and efficient environmental policies," in Environment and Economics, (Paris: Organization for Economic Cooperation and Development, 1985), p. 171.

8. Pers. Comm., Alexander Zink, Director of Policy Development, Department of the Environment, Baden-Wurttemberg, Germany.

9. M. Winfield and H. Sawai, Environmental Technology Support Programs in Canada: A Survey (Toronto: Canadian Institute for Environmental Law and Policy, 1993)

10. Environment and Taxation Working Group, Final Report (Toronto: Ontario Fair Tax Commission, 1992), ch. 3.

11. "Recent Developments in the use of Economic Instruments for Environmental Protection in OECD Countries," (Paris: Organization for Economic Cooperation and Development, 1991).

12. See B. Heidenrieck, M. Winfield, "Sustainable Development, Public Policy and the Law," in J. Swaigen, ed., Environment on Trial: A Guide to Ontario Environmental Law and Policy (Toronto: Canadian Institute for Environmental Law and Policy and Emond-Montgomery Publishers, forthcoming 1993)