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

RESPONSE TO INCINERATION INFORMATION PACKAGE:

Proposed Amendment to Regulation 347

Proposed Exemption order under Environmental Assessment Act

Air Pollution Control Guideline for New Municipal Waste Incinerators

CIELAP Brief 95/3

Prepared by:

Mark S. Winfield, Ph.D.
Director of Research

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RESPONSE TO MINISTRY OF ENVIRONMENT AND ENERGY INCINERATION INFORMATION PACKAGE

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I. INTRODUCTION

The Canadian Institute for Environmental Law and Policy (CIELAP) welcomes the opportunity, provided through Part II of the *Environmental Bill of Rights*, to comment on the Ontario's government's regulatory and policy proposals regarding the establishment of new municipal solid waste (MSW) incineration facilities in the province. MSW diversion has been a major focus of the Institute's work over the past six years. In 1989 CIELAP published the major report Regulatory Options for Solid Waste Diversion in Ontario. This was followed in January 1993 by a major conference on Ontario MSW policy. In October 1993 published Who Pays for Blue? Financing Residential Waste Diversion in Ontario.

On the basis of its past and present research in the MSW field, CIELAP has concluded that there are sound economic, environmental and planning reasons for maintaining the existing provisions of Regulation 347 regarding new incineration facilities. Therefore, CIELAP cannot support the government's proposals, presented in the Incineration Information Package, to remove the ban contained in Regulation 347, on the establishment of new MSW incineration facilities in Ontario.

These reasons include the likely impact of new MSW incineration facilities on Ontario's growing recycling industry, and on existing industries, such as pulp and paper, which require secure access to supplies of secondary materials. In addition, attention must be given to the environmental impacts of stack emissions from MSW incineration facilities and the environmental problems associated with the disposal of bottom and fly ash from such operations. Finally, as presently drafted, the province's proposal would *require* municipalities to consider incineration as an option as part of their MSW master plans, whether they wish to do so or not.

2. THE ECONOMIC RATIONALE FOR MAINTAINING THE CURRENT PROHIBITION ON NEW MSW INCINERATION FACILITIES

There is a serious concern that the establishment of new MSW incineration facilities could undermine Ontario's growing recycling industry. It could also threaten the economic viability of existing major industrial sectors, particularly pulp and paper, which now require a steady and secure supply of secondary materials in order to retain access to their

primary export markets.

MSW incineration facilities require a constant flow of waste in order to operate efficiently. It is for this reason that incineration facilities are typically operated on a "put or pay" basis. The recently opened Peel Resource Recovery Facility provides an example of such a contract.[1] "Put or Pay" arrangements require the municipality using a facility to provide the operator with a minimum flow of waste or to pay a financial penalty. In effect, the municipality's efforts to divert waste from disposal through waste reduction, reuse, recycling and composting are "capped" by the need to maintain a minimum flow of waste to the incineration facility.

This problem is compounded by the consideration that incineration facilities prefer to receive wastes with high energy content, such as fibre (e.g. newsprint, fine paper, corrugated paper, boxboard, old magazines) and plastics. The presence of such materials in the waste stream reduces the amount of supplemental energy required to complete the combustion of the waste.

Unfortunately, these secondary materials are precisely those for which very strong markets have emerged in North America over the past few years. Secondary fibre is currently valued at between $180 and $200/tonne and some plastic resins (e.g. HDPE, PET) at over $1000/tonne. Indeed, demand for these materials is currently outstripping supply in North America.[2] By contrast, incineration facilities typically *charge* municipalities between $60 and $70 tonne to deal with the wastes delivered to them.[3]

This sudden growth in demand is due to a number of factors. Perhaps the most important has been the introduction of recycled content legislation for newsprint in at least 13 U.S. states, and the establishment of voluntary recycled content agreements (under threat of legislation, in 13 others. Many states and the U.S. federal government have also introduced purchasing requirements for secondary content paper in government operations, and for government contractors. In addition, several states have introduced recycled content requirements for certain uses of plastic.[4]

In order to deal with this situation, the Ontario pulp and paper industry has invested over $180 million in providing Ontario mills with the capacity to use secondary fibre as a feedstock. In addition, the industry has been reported as anticipating further investments of this nature of at least $120 million over the next few years.[5] The current uses of secondary fibre by Ontario mills is outlined in the following table.

Secondary Fibre Capacity - Ontario Paper and Fibre Mills[6]

Material	Number of Mills Using Material	Capacity Tonnes/yr
Old Newsprint	6	646,000
Corrugated Cardboard	8	464,000
Boxboard	2	>21,000
Old Magazines	6	184,000
Fine Paper	8	>380,000

The significance of these developments cannot be understated. The United States constitutes the Canadian pulp and paper industry's primary export market. The capacity to provide secondary content fibre products has become essential to retaining access to that market. Demand for secondary fibre in Ontario now exceeds the available supply in Ontario by a significant margin.[7] The establishment of new MSW incineration facilities, with their intense demand for high energy content waste, would significantly exacerbate this situation, and potentially threaten the economic viability of existing Ontario fibre mills, which employ thousands of Ontarians.

Ontario Waste Stream Composition - Residential[8]

Material	Percentage of Total Stream	Potential for 3Rs or Compost	Energy Content
Paper (newspapers, fine papers, magazines, telephone books, tissue)	29%	High	High
Food and Yard Waste	31.6%	High	High
Packaging (boxboard/cardboard, glass, steel aluminum and plastic)	19.5%	High	Low (metal, glass)/ High (Fibre)
Other (Textiles, Leather Rubber, pet litter)	11.6%	Low	Low
Diapers	2.8%	Low	Low

The importance of the recent developments in the demand for secondary materials in North America for the viability of incineration facilities cannot be understated. Markets now exist, or are emerging for virtually all of the significant combustible components of the MSW stream. Demand for fibre and certain types of plastic already outstrips supply. Non-recyclable plastic and composite materials are disappearing from disposable single-use applications due to the impact of recycled content requirements in the U.S. and product stewardship initiatives in Europe. Centralized, community and residentially based composting efforts are increasingly successful in removing food and yard wastes from the waste stream. In the result, the remainder of the waste stream, will have very little energy content. Indeed, it seems very likely that the largest remaining component of the waste stream will be construction and demolition wastes (i.e. soil, bricks and rubble).

Ontario Waste Stream Composition
Industrial-Commercial Institutional[9]

Material	Percentage of Total Stream	Potential for 3Rs or Compost	Energy Content
OCC	7%	High	High
Mixed Paper	20%	High	High
Glass	3%	High	Low
Metals	12%	High	Low
Plastics	12%	Medium/ High (varies with resin)	High
Food/Yard	11%	High	Medium
Wood	6%	Medium	High
Construction and Demolition	20%	Low	Low
Other	9%		

It is for these reasons that CIELAP has concluded that incineration is not an economically rational response to the question of MSW management. The establishment of new incineration facilities would require municipalities to pay for the disposal of materials with substantial and increasing positive economic value. It addition, it would threaten the viability of emerging industries engaged in the collection and processing of secondary

materials, and the development of new uses of those materials, particularly with respect to secondary plastics. Finally, the establishment of new incineration facilities could damage the viability of the province's existing fibre industry, which must be able to provide secondary content fibre products in order to maintain access to its primary export market.

3. THE ENVIRONMENTAL IMPACTS OF MSW INCINERATION

In addition to their impact on the market for secondary materials, new incineration facilities would have a number of major direct negative impacts on environmental quality. These are focused in three areas: air emissions; fly ash disposal; and bottom ash disposal.

i) Air Emissions

Hazardous Contaminants

MSW incinerators have long been identified as significant sources of emissions of air pollutants, including dioxins and furans, various metals including mercury, lead and cadmium, and sulphur dioxide and nitrogen oxides. In fact, in study released in June 1995, the Centre for the Study of Biological Systems at Queen's College, State University of New York, concluded that MSW incineration facilities were the second largest source (24%) of dioxin found in the Great Lakes.[10]

Even if the proposed EPA *Clean Air Act* best available control technology standards were adopted in Ontario, as proposed in the Incineration Information Package, new incinerators would still emit significant amounts of dioxins and furans, heavy metals, and nitrogen oxides and sulphur dioxide to the environment. It is important to note that several of these substances (dioxins, furans, and mercury) are on the Tier I -"virtual elimination" list of substances presented in the June 1994 Canada-Ontario Agreement on Great Lakes Water Quality. They also appear on the Tier I "virtual elimination" list in the proposed Canada-U.S. Binational Strategy for the Virtual Elimination of Persistent Toxic Substances from the Great Lakes Ecosystem (August 1995 draft), and are likely to be classified as Track 1 substances under the federal government's June 1995 Toxic Substances Management Policy.

In effect, the province is proposing to permit the establishment of new sources of substances which are targeted for virtual elimination in both the Canada-Ontario and Canada-U.S. context. Indeed, under the terms of the proposed *Environmental Assessment Act* exemption order, municipalities would be *required* to consider creating such new sources if they have not "substantially completed" the "alternatives to" component of their MSW master plans. This constitutes a potential international embarrassment for a province which over the past decade has prided itself in being an international leader in environmental protection.

In addition, the proposed guideline fails to provide standards for emissions of Class I, II, III metals, even though these are regulated in British Columbia and within the European Union. Standards, at least equal to the highest existing standards within the Organization for Economic Cooperation and Development (OECD), should be established for these substances if the proposed amendment of Regulation 347 proceeds.

Furthermore, the proposed guideline, if adopted, should be put in place as a formal regulation under the Ontario *Environmental Protection Act*. This would ensure that all facilities would be required to meet the proposed standards. A timetable for the application of the standard to existing MSW and hospital waste incineration facilities should also be established.

Carbon Dioxide Emissions and Energy Consumption

In addition, to being significant sources of hazardous contaminants, new incineration facilities would also be major sources of carbon dioxide. In addition, the existing of such new facilities would indirectly increase carbon emissions from other sources, as materials which might be reused and recycled, resulting in significant savings in comparison to the use of new materials, are employed as fuel for incinerators. The relative energy savings in recycled content manufacturing vs. energy generated from waste incineration for the major components of the waste stream are presented in **Appendix 1**.

ii) Fly Ash

The large quantities of fly ash produced by MSW incinerators has been long identified as being likely to contain many of the same contaminants identified in the proposed emission guideline. For this reason, MSW incinerator fly ash is classified as a hazardous waste in many jurisdictions, including Ontario, Quebec and British Columbia. Its status in the United States has been the subject of extensive litigation.[11] Classification as hazardous waste requires disposal in secure hazardous waste landfills. This results in a substantial cost to incinerator operators and customers, and reinforces the point that the use of incineration does not eliminate the need for landfill sites in MSW management.

ii) Bottom Ash

MSW incineration facilities, of course, also produce major quantities of bottom ash. This is typically at least 30% of the original volume of the waste placed in the facility. Indeed, it is likely to be higher if, for the reasons outlined above, the reusable, recyclable, and compostable elements of the waste stream are removed prior to incineration. The bottom ash, even if not classified as a hazardous waste, still requires disposal in landfill at substantial cost. In other words, the use of incineration as a MSW management option

does not eliminate the need for landfills, and their associated economic and environmental costs.

4) IMPACT ON MUNICIPAL MSW MANAGEMENT PLANNING

The government proposes to exempt from consideration of incineration as an "alternative to" under s.5(3) of the *Environmental Assessment Act* municipalities or groups of municipalities which have "substantially completed" their analysis of alternatives in their waste management planning process for the purposes of the Act.

CIELAP supports such an exemption, in so far as it goes for the reasons stated in the Incineration Information Package. However, CIELAP notes that under the government's proposal, municipalities which have not "substantially completed" the consideration of "alternatives to" phase of their MSW management planning activities will be compelled to expend time and energy considering incineration as an option.

Given the economic and environmental factors outlined above, it is highly unlikely that municipalities will conclude that incineration is favoured option in MSW management. If effect, municipalities will be required to spend time and energy examining an option which they are very unlikely for pursue. For this reason, CIELAP recommends that, if s.12.1 of Ontario Regulation 347 is revoked, the proposed exemption under the *Environmental Assessment Act* should be extended, so that all municipalities have the option of considering incineration as an alternative in MSW planning, but are not *required* to do so.

5. CONCLUSIONS AND RECOMMENDATIONS

In light of the forgoing economic and environmental considerations, the Canadian Institute for Environmental Law and Policy cannot support the government's proposal to withdraw section 12.1 of Ontario Regulation 347. We therefore make the following recommendations.

OPTION 1 - RETAIN EXISTING PROVISIONS OF REGULATION 347 AND INTRODUCE NEW EMISSION STANDARDS FOR EXISTING MSW INCINERATORS (Preferred Course of Action by Ontario Government)

Recommendation 1.1

The Government of Ontario should retain s.12.1 of Ontario Regulation 347 as presently drafted.

Even if s.12.1 of Regulation 347 is retained, existing MSW incinerators will continue to be significant sources of major environmental contaminants, some of which (dioxin/furan mercury, and lead) are targeted for "virtual elimination" under the June 1994 Canada Ontario Agreement, and the proposed Canada-U.S. Binational Virtual Elimination Strategy for Toxic Substances in the Great Lakes. The will also be targeted for "no detectable release" through the federal government's June 1995 Toxic Substances Management Policy.

Recommendation 1.2

The Government of Ontario should make a regulation under the *Environmental Protection Act* governing air emissions from existing municipal solid waste incinerators in Ontario. This regulation should set a timetable for achieving no detectable release for Canada Ontario Agreement Tier I substances (dioxins, furans, and mercury), the achievement of the proposed EPA Clean Air Act standards for other substances named in the proposed EPA standards, and the achievement of the highest standard of the B.C. or European Community Standards for Class I, II, and III metals.

If section 12.1 of Regulation 347 stands a potential technical conflict may exist between this provision and the requirement to consider alternatives under s.5(3) of the *Environmental Assessment Act*.

Recommendation 1.3

In order to formally reconcile the requirements of *Environmental Assessment Act* and Regulation 347 an exemption should be provided via regulation, stating that municipalities are not required to consider incineration as an "alternative to" in their MSW planning under the Act.

OPTION 2 - REPEAL S.12.1 OF REGULATION 347 AND INTRODUCE NEW EMISSION STANDARDS FOR MSW INCINERATION FACILITIES (least preferred option)

In the event that the government feels that it must withdraw s.12.1 of Regulation 347 immediately, CIELAP makes the following recommendations.

Recommendation 2.1

The Government of Ontario make a regulation under the *Environmental Protection Act* governing air emissions from new and existing municipal solid waste incinerators in Ontario. For new facilities, this regulation should require no detectable release for Canada Ontario Agreement Tier I substances (dioxins, furans, and mercury), adopt the proposed EPA Clean Air Act standards for other substances named in the proposed EPA standards, and the highest standard of the B.C. or European Community Standards for Class I, II, and III metals. The regulation should also set timetables for the achievement of these standards by existing facilities.

Given the serious environmental and economic factors which weigh against the adoption of incineration as a MSW management option by municipalities, municipalities should not be required to expend time and resources on the examination of this option as part of the MSW planning activities for the purposes of the *Environmental Assessment Act*.

Recommendation 2.2

The proposed exemption under the *Environmental Assessment Act* for municipalities which have completed the "alternatives to" component of the MSW planning under the Act should be extended, so that all municipalities have the option of considering incineration as an alternative in MSW planning, but are not required to do so.

OPTION 3 - REFERENCE TO ENVIRONMENTAL COMMISSIONER

Given the highly contentious nature of the MSW incineration issue, and the complex economic and environmental factors involved, the government may benefit from an independent evaluation of these issues prior to altering the current situation. The recently enacted *Environmental Bill of Rights* provides a mechanism whereby the Environmental Commissioner can be asked by the government to investigate a given issue and report back to the government. CIELAP suggests that, as an alternative to maintaining the status quo, the government make use of this mechanism and request that the Environmental Commissioner's Office investigate and report on the environmental and economic consequences of removing section 12.1 of Ontario Regulation 347. The government could then consider the Commissioner's findings in its decision-making on this matter.

Recommendation 3.1

The Government of Ontario recommend to the Legislature that it request that, under s.59 of the *Environmental Bill of Rights*, **the Environmental Commissioner investigate and report on the environmental and economic effects of removing the current ban on new MSW incinerators in Ontario.**

CIELAP hopes that these comments will be of assistance to the Ministry in its considerations of this matter, and would be please to respond to any questions which the Minister, her staff or her officials might have.

Endnotes

1.Under a 20-year Waste Supply Contract Peel region has agreed to supply Peel Resource Recovery Inc. with waste on a put or pay basis for a fixed tipping fee of $67.25/tonne in 1989 dollars. If Peel fails to fulfil its obligation to supply waste, it must pay an "energy shortfall fee" of $14.50/tonne in 1986 dollars.

2.John E. Young, "The Sudden New Strength of Recycling," World Watch, (July/August 1995).

3.Peel Resource Recovery Inc. charges $67.25/tonne for disposal, the Burnaby, B.C. energy recovery facility opened in 1988 charges $60/tonne, and the Hamilton, Ontario Solid Waste Reduction Unit (SWARU) charges $70/tonne.

4.See M.Winfield and P.Vopni, Review of the GTA 3Rs Analysis EA Input Document (Toronto: Canadian Institute for Environmental Law and Policy, August 1994) Part III.

5.See Recycling Council of Ontario, RCO Policy Forum: Backgrounder Energy from Waste: Understanding the Issues (Toronto: RCO, May 1995), p.26.

6.**Source:** MoEE, GTA 3Rs Analysis Service Technical Appendix: Schedule H (Nov. 1993).

7.Pers. Comm. Norm Pirdham, Manager, Utilities Project Services, QUNO Corporation, May 5, 1995.

8.**Source:** Ontario Ministry of the Environment, February 1991. Estimates of 3Rs and composting potential based on MoEE GTA 3Rs Analysis: Schedule H.

9.**Source:** MoEE, Greater Toronto Area 3Rs Analysis EA Input Document, 1993. Estimates of 3Rs and composting from MoEE GTA 3Rs Analysis: Schedule H.

10.M.Cohen, B.Commoner, et. al, Quantitative Estimation of the Entry of Dioxins, Furans and Hexachlorobenzene into the Great Lakes From Airborne and Waterborne Sources (New York: Center for the Biology of Natural Systems, May 1995). Hospital incinerators where identified as the largest source (53%) of dioxins in the Great Lakes basin, Table II-A, p.10.

11.RCO, Backgrounder, p.13.

APPENDIX 1

Comparison of Energy Conserved in Recycled Content Manufacturing and Energy From Waste

From

Sound Resource Management Group, Inc.
Recycling Versus Incineration: An Energy Conservation Analysis

Prepared for

Pollution Probe

and

Work on Waste USA

September 1992