

**SUBMISSION TO THE STANDING SENATE COMMITTEE ON ENERGY, THE
ENVIRONMENT AND NATURAL RESOURCES**

CANADIAN ENVIRONMENTAL PROTECTION ACT REVIEW

MERCURY

**Hugh Wilkins
Staff Lawyer**

**Sierra Legal Defence Fund
30 St Patrick Street, Suite 900
Toronto, Ontario M5T 3A3**

**Tel: 416 368 7533 ext 34
Fax: 416 363 2746**

31 October 2006

Mercury is a toxic, persistent, bioaccumulative substance,¹ the dispersal of which through emissions into the environment has caused severe health, economic and environmental damage, not just in Canada, but across the globe. The federal government has the power under the *Canadian Environmental Protection Act* (CEPA) to make comprehensive binding regulations to substantially reduce mercury emissions and their effects. However, apart from the regulation of chlor-alkali releases, Canada has failed to do so. The problem arises not so much from deficiencies in CEPA, but from deficient political will to take action.

In reviewing CEPA, consideration must be given to ways to strengthen mechanisms within CEPA that buttress the political will to take regulatory action. Specifically, attention should be given to strengthening CEPA's tools that encourage public participation in the regulatory decision-making process, expand the scope of regulatory options and promote the enforcement of regulations once they have been passed.

To effectively address mercury contamination, a strong regulation is required that reduces mercury emissions, especially from coal-fired power plants. Environment Canada states that 60-90% reductions in mercury emissions from coal-fired power plants are feasible.² However, the aim must be to eliminate mercury emissions from all human-induced sources. This should be the target that regulations under CEPA set. Using the CCME is no solution for controlling harmful toxic substances, such as mercury. Moreover, as Canadians are inundated by US mercury emissions, Canada must reduce its own emissions so that we become a model for the US and have the moral authority to urge them to reduce their emissions.

The Adverse Impacts of Mercury Emissions

Mercury is one of the most pervasive multi-media toxins that exist. It is a highly volatile, unpredictable and indestructible element, which, when released into the environment, is readily transformed into various pervasive forms. Mercury can travel airborne across vast

¹ Draft CWS for Mercury Emissions from Coal Fired Electric Power Generation Plants, p. 1.

² Environment Canada, *Mercury and the Environment: Canada's comments on the US mercury standard* (30 March 2004), p. 2.

distances, posing lethal national and international threats to human and environmental health.³

Mercury exposure has significant neurological and developmental effects on both human beings and wildlife, ranging from nerve damage to losses of sensory or cognitive ability, learning disabilities, birth defects, tremors, multiple sclerosis, cerebral palsy, to death. Mercury can also lead to alterations to the immune system, liver degeneration, kidney toxicity and cardiovascular disease. Communities that rely on fish and wildlife for food, including Aboriginal peoples in Canada,⁴ are usually at greatest risk, particularly women of child-bearing age, young children, and fetuses.

As a persistent toxic substance, the longer and the greater the use of mercury, the greater its cumulative impacts will be. Most of the mercury in fish is methylmercury, which biomagnifies and bioaccumulates in animal tissue and persists and accumulates in the environment. Methylmercury is highly toxic to the nervous system, particularly the brain, which is the principal target. One report from the US estimates that the cost on diminished economic productivity caused by the loss of intelligence in US children due to the neurodevelopment impacts of methylmercury is about US\$8.7 billion annually.⁵ Presently, significant levels of methylmercury are regularly found in fish sold in markets across Canada. Approximately 13% of sportfish tested by the Ontario government does not meet Health Canada guidelines for mercury.⁶

Based on data on risks to fetuses, in 2003 the UN Food and Agriculture Organization (FAO) and the World Health Organization (WHO) lowered their recommendations for provisional tolerable weekly intake of mercury by more than half.⁷ The US

³ CWS for Mercury Emissions: Base Metal Smelters and Waste Incineration, p. 1.

⁴ Arctic Council, 'Barrow Declaration on the Occasion of the Second Ministerial Meeting of the Arctic Council' (11 October 2000).

⁵ L. Trasande *et. al.*, "Public Health and Economic Consequences of Methyl Mercury Toxicity to the Developing Brain", 133:5 Environmental Health Perspectives (2005).

⁶ Ontario Ministry of the Environment, *Sport Fish testing data August 04 – August 05* (unpublished).

⁷ The recommendation for tolerable weekly intake of mercury was reduced from to 1.6 µg per kg body weight, from a previous recommendation of 3.3. See United Nations Food and Agriculture Organization (FAO), 'Summary and Conclusions of the Sixty-first Meeting of the Joint FAO/WHO Expert Committee on Food Additives' (JECFA/61/SC, 10-19 June 2003).

Environmental Protection Agency states that the upper "safe" limit for blood mercury levels in human beings is 5.8 ug/l. Tests on Aboriginal peoples in Canada have shown blood mercury levels ranging up to 660 ug/l in areas where fish consumption is high. It has been found that 16% of people living in Northern aboriginal communities have over 100 ug/l of mercury in their blood.⁸

Levels of mercury in the atmosphere have more than tripled since the commencement of the Industrial Revolution. It is estimated that half of the mercury cycling through the environment is from human sources.⁹ According to Environment Canada, the primary sources of mercury emissions in Canada are from the base metals smelting sector; chemical industry; electric power generation (fossil fuel); environmental emergency; incineration; and industrial, commercial and consumer products.¹⁰ There is likely no threshold at which the effects of mercury cannot be observed and there are no means to address mercury contamination once mercury has been released.

Countries across the globe are taking significant measures to address the economic, health and environmental harm caused by mercury. The European Commission's strategy for reducing mercury production, use and emissions is to phase out the export of mercury from the EU by 2011.¹¹ In Sweden, a domestic goal has been set to become a mercury-free society banning mercury completely by 2007.¹² Several countries, including Guinea, Moldova, the Philippines, Sweden, Switzerland, and the EU support the creation of a legally-binding international agreement banning or significantly curtailing the use of mercury.¹³ Moreover, many scientific and environmental organizations have stressed the

⁸ Ontario Public Health Association, "Position on Fish Consumption, with respect to Methylmercury Content, by Pregnant Women, Women of Childbearing Age and Young Children" (OPHA, 2004), at 22-23.

⁹ Environment Canada, *Mercury* (undated), found at <http://www.ec.gc.ca/TOXICS/EN/detail.cfm?par_substanceID=141&par_actn=s1>.

¹⁰ Ibid.

¹¹ Communication from the Commission to the Council and the European Parliament of January 28 2005 on a Community Strategy Concerning Mercury, n. 43 above.

¹² Swedish Chemicals Inspectorate, 'Mercury – Investigation of a General Ban, Report No 4/04 (Swedish Chemicals Inspectorate, October 2004); Anonymous, 'Brussels Seeks Ban on Mercury in Measuring Devices,' 374 *The ENDS Report* (March 2006), 43.

¹³ H. Selin and N. Eckley Selin, 'Global Politics of Mercury Pollution: The Need for Multi-scale Governance' 15:3 *Review of European Community and International Environmental Law* (forthcoming).

need for the virtual elimination of all uses and releases of human-induced mercury pollution.

Regulatory Tools in the CEPA Toolkit

Substances which are determined by the Ministers of Health and Environment to be toxic under the rules set out in CEPA are listed in the Toxic Substances List in Schedule 1 of CEPA and may be regulated under the Act.

Section 91 of CEPA states that the Government may make regulations with respect to a toxic substance on a wide variety of issues including:

- the quantity or concentration of the substance that may be released into the environment either alone or in combination with any other substance from any source or type of source;
- the places or areas where the substance may be released;
- the commercial, manufacturing or processing activity in the course of which the substance may be released;
- the manner in which and conditions under which the substance may be released into the environment, either alone or in combination with any other substance;
- the quantity of the substance that may be manufactured, processed, used, offered for sale or sold in Canada; and
- any other matter that by this Part is to be defined or prescribed or that is necessary to carry out the purposes of this Part.

Mercury is listed as a toxic substance in Schedule 1 of CEPA; however, the only regulation on mercury is for chlor-alkali mercury releases.¹⁴ The Government has not regulated any other source of mercury emissions.

Although it is not a CEPA requirement, the 1995 Toxics Substance Management Policy provides the policy framework for making decisions on managing toxic substances under

¹⁴ Chlor-Alkali Mercury Release Regulations, SOR 90/130.

CEPA. Substances that are persistent, bioaccumulative, toxic (including those listed in CEPA Schedule 1) and primarily the result of human activity are targeted under the Toxics Substance Management Policy for virtual elimination from the environment (Track 1 substances). Substances that do not meet these criteria require life-cycle management to prevent or minimize its release into the environment (Track 2 substances). Although mercury arguably meets the criteria for virtual elimination, it has been designated as a Track 2 substance.

In parallel to the Toxics Substance Management Policy, CEPA contains its own provisions on virtual elimination. Under Section 77(4) of CEPA, only substances that have the following attributes may be proposed for virtual elimination:

- those that are persistent and bioaccumulative;
- the presence of the substance in the environment results primarily from human activity;
- the substance is not a naturally occurring radionuclide or a naturally occurring inorganic substance.

CEPA defines "virtual elimination" as "the ultimate reduction of the quantity or concentration" of a toxic substance "released into the environment" as a result of human activity to below a specified level.¹⁵ This level is to be determined by the Ministers of Health and Environment and set out in a Virtual Elimination List.¹⁶ This definition of virtual elimination unfortunately focuses on releases of these toxic substances into the environment, primarily from industrial processes, and does not target the use of these toxic substances or of products containing them. It also lacks provisions that in fact require "the ultimate reduction of the quantity or concentration of the substance".

Following the lead of other jurisdictions including Sweden, there is a need to seek to regulate mercury so that anthropogenic sources of mercury are eliminated. Given the

¹⁵ CEPA, Section 65(1) and (2).

¹⁶ CEPA, Section 65(2).

significant adverse effects of mercury, consideration must be given to designating mercury as a Track 1 substance and also placing it on the Virtual Elimination List

Moreover, there is a need to strengthen CEPA's provisions on virtual elimination so that it focuses not only on "releases into the environment" but also "use" of the substances in question and to clarify language in the Act so that action is taken regarding substances on the Virtual Elimination List that in fact results in "the ultimate reduction of the quantity or concentration".

There is a need to place substances on the Virtual Elimination List. No substances whatsoever have been placed on the list to date.¹⁷ Again, it is a question of political will.

The Tools in Use

As described above, CEPA provides the regulatory tools to effectively address mercury emissions. The problem has been a lack of political will to use those regulatory tools. No regulations have been put in place apart from a regulation on chlor-alkali mercury releases, which presently applies to only one facility in Canada.

The two CEPA provisions that have been primarily relied on to control mercury pollution have been those on non-regulatory pollution prevention (P2) plans¹⁸ and CEPA's provisions on equivalency agreements, which have prompted the development of Canada Wide Standards (CWS) on mercury.

Pollution Prevention (P2) Planning

Pollution Prevention plans are non-binding, unenforceable codes of conduct that are designed to encourage polluters to take action on reducing their emissions to the environment. The Minister may publish a Notice requiring a person to prepare and

¹⁷ The list created by regulation. In 2003, a regulation was proposed to add Hexachlorobutadiene (HCBD) to the list. It has not yet been passed. See <<http://www.ec.gc.ca/CEPARegistry/regulations/DetailReg.cfm?intReg=82&x=24&y=8>>. See also *Canada Gazette* (16 August 2003), found at <http://www.ec.gc.ca/ceparegistry/documents/regs/g1-13733_r1.pdf>

¹⁸ CEPA, Sections 56-63.

implement a P2 plan regarding a toxic substance.¹⁹ A number of factors are considered in the preparation of P2 plans including risk management objectives and site-specific targets. Polluters that are asked to comply with P2 plans are under no legal obligation to fully address these factors, but are only to consider them in the preparation of the plans. If a specified target or other factor in the P2 plan is not met, an explanation setting out why is required. However, despite the fact that this would result in non-compliance with CEPA, there are no mechanisms to address such violations and there are no provisions for auditing or monitoring facilities with respect to performance or compliance with their P2 plans. The person who is required to prepare a P2 plan is simply required to prepare a declaration of preparation of the plan within 30 days after the end of the period stipulated in the Notice for preparation. The person is also required to file a declaration of implementation of the plan within 30 days after the implementation of the plan.²⁰ Presently, there is very little transparency in the P2 planning process, although Environment Canada is reportedly "developing a database to house information submitted under P2 planning Canada Gazette notices."²¹

Regarding the control of mercury emissions, P2 planning has been used to address mercury emissions from base metal smelters²² and consultations for P2 planning concerning mercury releases from electric arc furnaces and mercury-containing components and mercury-containing switches in vehicles has been commenced.²³ P2 plans are the present Government's primary means of controlling mercury emissions from large emitters; however, only one emitter has been targeted: Hudson Bay Mining and Smelting, which is the single largest point source of mercury on the continent.²⁴ There are no targets cited for other smelters anywhere in Canada. Consultations on P2 planning concerning mercury releases from electric arc furnaces and vehicle components

¹⁹ CEPA, Section 56(1).

²⁰ CEPA, Section 58(1).

²¹ See Environment Canada, "P2 Planning Canada Gazette Notices" (undated), found at <<http://www.ec.gc.ca/nopp/p2p/en/p2notices.cfm>>.

²² *Canada Gazette*, Vol. 140, No. 17 — April 29, 2006

²³ Environment Canada, "P2 planning Consultations: Mercury releases from electric arc furnaces and from mercury-containing components and mercury-containing switches in vehicles (14 March 2006).

²⁴ See National Pollutant Release Inventory (NPRI).

and switches were commenced only this year, after CWS discussions on this subject faltered.

Canada-Wide Standards (CWS) for Mercury

Provisions in CEPA permit the use of equivalency agreements between the provinces as a means of harmonizing environmental standards. Canada-Wide Standards (CWS) have been developed for six priority substances, including mercury, in order to facilitate these efforts at harmonization. CWS have been agreed for mercury emissions from base metal smelters and waste incineration, mercury-containing lamps, dental amalgam waste and, most recently, coal-fired electric power generation plants. These standards are intended to be achievable targets based on scientific, social and economic factors and technical feasibility.

Each province has responsibility for implementing the standards, and, as such, the degree to which they are binding or enforceable depends on the jurisdiction; however, in terms of mercury, all the CWS are voluntary. As such, emitters of mercury are encouraged to make 'determined efforts' at achieving the standards, while no enforcement tools exist.

As the CCME develops CWS based on consensus decision-making, lowest common denominator outcomes have been the result. Differing priorities among provinces have made consensus difficult to achieve and made CWS negotiation processes long and drawn-out. The process has been further weakened by the ability of a province to withdraw from the process on its own volition. Generated within these parameters, the outcomes of CWS processes have generally constituted weak, unenforceable objectives to which little serious attention has been given.

An excellent example is the process that led to the development of the CWS for coal-fired power generation facilities. Negotiations on this CWS commenced in 1999, but from the start several factors slowed progress, including barriers set by the power sector, which was keen to derail the process, concerns over harmonization with US standards

that were being developed, varying interests of provinces based on their reliance on coal-fired energy, and inadequate emissions data. In the end, as the negotiations stagnated, while emissions accelerated and accumulated. Moreover, the final product is weak, with the Ontario Minister of Environment stating before the CWS's adoption that Ontario would be unable to meet its commitment.²⁵

In the case of the development of CWS on mercury switches, negotiations became so bogged down that the initiative was abandoned leading this year to the federal Minister of Environment using her authority under CEPA to require P2 plans on these items.

Like P2 plans, the fact that the CWS are not binding or enforceable has meant that once they have come into effect, they have had minimal impacts. The CWS are, in essence, voluntary objectives with little means for follow-up or accountability.

Recent Government Proposals to take Action on Mercury: *Canada's Clean Air Act*

On 19 October 2006, the federal government published its Notice of Intent to regulate several air pollutants, including mercury.²⁶ This initiative potentially reflects some political will to take regulatory action on toxic substances; however, the Notice provides no specifics regarding regulations focusing on mercury and the proposed timeframes for bringing regulations into force on other air pollutants are very long.

Also on 19 October, the federal government introduced a bill to amend CEPA and create *Canada's Clean Air Act*.²⁷ In this bill, mercury is designated as an “air pollutant”. Although, no proposal to correspondingly delete mercury from CEPA, Schedule 1 has yet been made, such an initiative could diminish the government's ability to effectively regulate this substance. Former Supreme Court of Canada Justice Gerard La Forest has stressed that the government should not alter the existing provisions on mercury under CEPA. He states:

²⁵ Robert Benzies, "Ontario reneges on its vow to cut emissions: Coal-fired plants to blame, sources say", *Toronto Star* (29 June 2006).

²⁶ See *Canada Gazette* Vol. 140, No. 42 — October 21, 2006.

²⁷ See Bill C-30 (19 October 2006).

The task of devising new environmental provisions that would provide the tools for the protection of the environment equivalent to those provided by CEPA is fraught with danger.²⁸

Arguments have been raised that designating mercury as an "air pollutant" may raise issues of constitutional law about whether the federal government has the jurisdiction to enact legislation on air pollutants. The Constitution does not delineate federal authority to pass laws regarding the environment as the environment was not a pressing issue at the time of Confederation. Past Supreme Court of Canada decisions, including *Regina v. Crown Zellerbach Canada Ltd*²⁹ and *Regina v. Hydro-Québec*,³⁰ found that the federal government has the power to enact legislation on toxic substances, pursuant to its constitutional powers to govern in areas of criminal law and peace, order and good governance. However, the question as to which level of government has the authority to enact legislation on "air pollutants" has never been tested. To subject environmental laws on mercury to such a challenge by designating it as an "air pollutant" is unnecessary and potentially problematic.

Generating Political Will

There are two primary problems with CEPA that must be addressed in order to strengthen the political will to enact effective regulations and diminish the health, economic and environmental harm that mercury emissions cause. First, CEPA's provisions on public participation and transparency must be strengthened. Mechanisms must be put in place that permit citizens to petition the government to enact regulations, P2 plans and equivalency agreements under the Act and to be engaged in consultations on their drafting. Mechanisms must also be created that allow the public to monitor activities in the P2 planning and CWS processes and enforcement of regulations.

²⁸ See D. Bueckert, 'Canada's law to curb toxic substances at risk in amendments, says judge' (Canadian Press, 24 October 2006).

²⁹ [1988] 1 SCR 401.

³⁰ [1997] 3 SCR 213.

Secondly, the scope of the regulations that can be passed to regulate mercury should be expanded providing greater flexibility in regulatory approaches. These approaches must aim to eliminate mercury emissions from all human-induced sources. Regulatory actions should include the ability of the Ministers to provide incentives for the use of substitutes for mercury in products, renewable energy and conservation and for the internalization of environmental and health costs in the costs of goods, to name but a few. If regulatory action can take new or innovative binding approaches to regulating mercury, the political will to take such actions may increase.

Enforcement of CEPA

Incentives for enforcement of pollution prevention plans, CWS, and regulations must be strengthened. Provisions should be included in CEPA that encourage citizens to participate in enforcing the Act. Monitoring and review mechanisms regarding the implementation of CWS, P2 plans and regulations should be created that encourage public involvement, transparency and corporate social responsibility and accountability. Barriers preventing citizens from engaging in Environmental Protection Actions under Part X of CEPA must be examined and removed. The threshold hurdles to such actions and to the right to bring a damages claim must be lowered. Fine-splitting provisions based on those used in the *Fisheries Act* regulations should be included in CEPA, and guidelines regarding the Attorney General's entitlement to stay and take over private prosecutions of regulatory offences should be set forth, which provide incentives for citizens to bring forward private prosecutions. The courts should also be empowered to order the recovery of costs incurred in the investigation and prosecution of offences under the Act in relation to private prosecutions.

Conclusions

Given the lack of political will to take action under CEPA on mercury, the Act has not met its objectives of preventing mercury pollution and protecting the environment and human health from its harmful effects.

Significant changes to CEPA are not needed; however, consideration should be given to strengthening tools in the Act that will increase the political will to take decisive regulatory action on mercury. A focus on encouraging public participation in the regulatory decision-making process, expanding the scope of binding regulatory actions and promoting the enforcement of regulations once they have been passed are important means to generate the political will and awareness needed to reduce mercury emissions and the harmful effects they have on our health, economy and environment.

Recommendations

Consideration must be given to ways to strengthen mechanisms within CEPA that buttress the political will to take regulatory action to reduce mercury contamination.

We propose that action focus on strengthening CEPA to:

- **encourage public participation and transparency in the regulatory decision-making process:** Provisions on public participation and transparency must be strengthened to:
 - permit citizens to petition the federal government to enact regulations, pollution prevention (P2) plans and equivalency agreements
 - allow greater public engagement in consultations on the drafting of new regulations, P2 plans and equivalency agreements.

- **expand the scope of regulatory options:** The scope of the regulations that can be passed to regulate mercury should be expanded providing greater flexibility in regulatory approaches. Regulatory actions should aim to eliminate mercury emissions from all human-induced sources and include:
 - the ability of the Ministers to provide incentives for the use of renewable energy and conservation
 - the setting of strict mandatory emission reduction targets
 - incentives to internalize environmental and health costs in the factors of production.

- **promote the enforcement of regulations once they have been passed:** Incentives for enforcement of pollution prevention plans, CWS, and regulations must be strengthened. These should include:
 - provisions that encourage citizens to participate in enforcing the Act

- monitoring and review mechanisms regarding the implementation of CWS and P2 plans that encourage public involvement, transparency and corporate social responsibility and accountability
- threshold hurdles to the public bringing Environmental Protection Actions under Part X of CEPA and to the right to bring a damages claim must be lowered.
- guidelines regarding the Attorney General's entitlement to stay and take over private prosecutions of regulatory offences, which provide incentives for citizens to bring forward private prosecutions
- fine-splitting provisions based on those used in the *Fisheries Act* regulations
- provisions that increase the power of the courts to order the recovery of costs incurred in the investigation and prosecution of offences under the Act in relation to private prosecutions.