

***A case for urgent federal action to regulate
mercury emissions from coal-fired power plants***

A Submission to the

Standing Senate Committee on Energy,
the Environment and Natural Resources

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Why is urgent federal regulatory action needed?

In summary,

- ◆ Canada is obligated under international law to reduce mercury emissions. Since December 2003 the *Heavy Metals Protocol*¹ has been in legal effect. Canada as signator is legally bound to take specified actions to reduce mercury emissions, including from the coal-fired power sector.
- ◆ The federal government has a clear mandate under the *Canadian Environmental Protection Act* to regulate industrial mercury emissions. The federal government as early as 1988 designated mercury as a priority substance and committed to take timely action to reduce emissions.
- ◆ Mercury is a neurotoxin which bioaccumulates in the environment. Local accumulation of mercury adjacent to Canadian power plants has been documented² and human health implications of unabated coal fired plant emissions has been documented for Ontario³ and the U.S.⁴
- ◆ The coal-fired power sector is the largest Canadian source of industrial mercury
- ◆ The federal government has committed to targets for reductions of mercury emissions from coal-fired power plants. In 1998 Environment Canada through the Canadian Council of Ministers of the Environment (CCME) committed to establishing national mercury reduction targets for the coal firepower sector by 1999. Almost a decade later while a Canada Wide Standard was finally issued setting national targets and timelines. However a CWS has no binding legal effect. It can only be made binding on an emission source through a federal or provincial law.
- ◆ No provincial government, except Alberta, has promulgated any regulations to require mercury emissions reductions for this sector. Further, less than 3 months after committing to the CWS, Ontario has reneged on its promise to eliminate 100% of its mercury emissions by shutting down all of its remaining coal- fired power plants.⁵
- ◆ Federal regulations are necessary to fill this regulatory vacuum and trigger provincial regulatory action.
- ◆ The failure to regulate mercury emissions creates a perverse subsidy for expansion of dirty coal- fired power for domestic and export markets.

¹ *Protocol to the 1979 UNECE Convention on Long Range Transboundary Air Pollution on Heavy Metals*, http://unece.org/env/lrtap/staus/lrtap_ss.htm

² W.f. Donahue, E.W. Allen and, D.W. Schindler, "Impacts of coal-fired power plants on trace metals and polycyclic aromatic hydrocarbons (PAHs) in lake sediments in central Alberta, Canada", *Journal of Paleolimnology* (2006) 35:111-128

³ Ontario Medical Association, "The Illness Costs of Air Pollution: 2005-2006 Health and Economic Damage Estimates, 2005" [www.oma.org/phealth/ground.htm]

⁴ See for example National Research Council, *Toxicological Effects of Methylmercury*, 2000 (289 pp); Johnathon Levy and Jack Spangler, "Health Benefits of Emissions Reductions from Older Power Plants", *Risk in Perspective*, April 2001, Volume 9, Issue 2.

⁵ "McGuinty's pollution pledge under new cloud: Agency's report urges further delays", *The Globe and Mail*, Wednesday, November 15, 2006; "McGuinty shifts blame for broken vow on coal", *The Globe and Mail*, Thursday, November 16, 2006.

- ◆ In failing to prescribe mercury emissions reductions for Canadian electricity generators, Canada is harming any case to be made for other governments to reduce their emissions which are harming Canada's environment.⁶

⁶ In 2005 the federal government filed a submission to the USEPA seeking stricter US standards. The Ontario Government has joined a law suit filed by numerous US state governments seeking a ruling that the USEPA is legally required to expedite actions to reduce mercury emissions from the US coal fired sector. In 2006 the Sierra Legal Defence Fund filed a petition to the USEPA on behalf a number of Canadian municipalities demanding stronger regulatory action by USEPA to reduce emissions on the basis they are polluting the Canadian airshed. [www.sierralegal.org]

1. What are Canada's International Obligations and Commitments?

Canada is signatory to a series of international conventions, protocols and bilateral and multilateral agreements pursuant to which we are obligated to monitor and reduce coal-fired power plant emissions.

Protocol to the 1979 UNECE Convention on Long- Range Transboundary Air Pollution on Heavy Metals (Protocol)

The *Heavy Metals Protocol* entered into legal force December 29, 2003. As signator, Canada is since December 2003 legally obligated to "**develop, without undue delay**, strategies, policies and programmes to discharge its obligations" to reduce total annual mercury emissions.⁷ Canada is also obligated to "**take measures to anticipate, prevent or minimize emissions [of mercury] taking into account the application of the precautionary approach**".⁸ Rather than committing to making reductions in specified industrial sources, Canada instead opted to comply with the requirement of a 50% reduction of total annual mercury emissions from listed sources (including coal-fired thermal generation) from 1999 levels.⁹

The Protocol also requires **adoption of Best Available Techniques to control and eliminate industrial sources of mercury** and development and maintenance of emission inventories. It is therefore noteworthy that the "New Government of Canada" has recently withdrawn the federal contribution to the Saskatchewan initiative to test mercury reduction technologies from lignite.

Proposed Global Mercury Treaty

At the 2005 UNEP meeting nations discussed a European proposal for a separate binding international treaty to reduce mercury use, trade and global pollution. Canada opposed any binding requirements and recommended a voluntary or action-plan approach over a binding agreement, on the basis this will enable more expedited actions to reduce global mercury.¹⁰ While the U.S. Administration has opposed the concept, the US Senate passed a resolution in October 2004 urging the government to support a treaty to require nations who contribute to the global mercury pool to share responsibility for corrective action.¹¹ Our federal government must reverse its position and support the EU proposal. Why?

- ◆ to show support for Alberta's regulatory actions¹²,

⁷ Article 5, para.1 <http://www.unece.org/env/lrtap/staus/lrtap_ss.htm>.

⁸ Preamble, Ibid.

⁹ Article 7.

¹⁰ <http://www.chem.unep.ch/mercury/Preparations-GC23-2005.htm>

¹¹ [Hhttp://www.businessnorth.com/pr.asp?RID=1113](http://www.businessnorth.com/pr.asp?RID=1113);H see also above for U.S. brief to UNEP.

¹² The Alberta Mercury Emissions from Coal-fired Power Plants Regulations, A.R 34/2006. came into legal effect March 2006.

- ◆ because reliance on voluntary action has resulted in no reductions from Canadian power plants, and
- ◆ the harm to human health and environment in the Canadian Arctic, a major recipient of the global mercury pool, will not cease without expedited global action.

Bilateral and Multilateral Commitments

Canada has also assumed a number of additional bilateral and multilateral commitments to track and reduce mercury emissions.

Table 1: Canadian Bilateral and Multilateral Commitments

Name of Agreement	Mercury Goal	Website
<i>Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem-2002</i>	85% reduction in mercury releases by 2005 and a 90 % reduction by 2010, with a 1998 baseline	www.ec.gc.ca/laws/coa
<i>Great Lakes Binational Toxics Strategy-1997</i>	To seek by 2000, a 90% reduction in the release of mercury, or where warranted, the use of mercury, from polluting sources resulting from human activity in the Great Lakes Basin [US commitment to 50% reduction]	www.binational.net
<i>North American Regional Action Plan on Mercury (NARAP), CEC Resolution 95-05 and CEC Implementation Plan</i>	Committed to implementation of best available techniques to reduce anthropogenic mercury including from power plants	http://www.cec.org/programs_projects/pollutants_health/smoc/
<i>Arctic Council Action Plan on Mercury</i>	Support to Arctic governments in their efforts to take remedial and preventive actions relating to contaminants	www.arctic-council.org
<i>Barrow Declaration and Arctic Environmental Protection Strategy, 2000</i>	Commitment to take action to reduce the health risk to Arctic residents from mercury deposition from outside sources	www.state.gov/www/global/oes/oceans/001013_barrow_declar.html
<i>Conference of New England Governors and Eastern Canadian Premiers, 2001 Resolution 26-3</i>	Adopted the <i>Mercury Action Plan</i> for 50% reduction of mercury by January 2005 and up to 90% by Jan 2010. Long-term goal of virtual elimination of mercury emissions from the region	http://www.cmp.ca/res-26-3-en.html
<i>Western Governors and Western Premiers, 2001 (post meeting commitment by Premier Klein)</i>	To cooperate with US governments to intensify effort to ensure "cleaner" burning coal-burning thermal electric production.	<i>Edmonton Journal</i> , August 14, 2001

2. The federal government has clear jurisdiction and power to regulate mercury emissions

CEPA empowers federal authorities to regulate toxins

The very purpose and intent of the *Canadian Environmental Protection Act, 1999* (CEPA 1999) is to **prevent harm to human health and the environment through federal actions to control toxic substances**. Originally enacted in the mid- 1980s, CEPA empowers the Ministers of Health and Environment to regulate any substances they designated as a toxic substance and listed in Schedule 1.

CEPA grants broad powers to the federal Ministers to regulate toxic substances including ¹³ 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 ...necessary to carry out the purposes of this Part of the Act.

Mercury is already designated a toxic substance

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.

Mercury is listed on Schedule 1 of CEPA. Mercury was grandfathered into CEPA 1999 from the *Canadian Environmental Protection Act, 1988* (CEPA 88), which took into consideration regulations that had been developed prior to CEPA 88, including the *Chlor-Alkali Mercury Release Regulations*. According to Environment Canada mercury is "managed" as a "Track 2" substance under the Toxic Substances Management Policy, subject to full life-cycle management to prevent or minimize releases into the environment and targeted for reduction to naturally occurring levels. This paves the way for preventive or control actions such as regulations, guidelines or codes of practice.

¹³ Section 91.

In 1998 the federal (and provincial) governments agreed to designate mercury as one of five priority substances for urgent action. They chose to do this by the development of Canada Wide Standards (CWS).¹⁴ The intent is that a CWS sets minimum reduction target and deadlines, which are in turn made binding by the government "best situated" to act. Both the federal and provincial governments have the power under their respective laws to regulate mercury. CEPA provides for regulations or other specified control instruments, with priority to pollution prevention.¹⁵ Yet despite the determination that urgent action was needed to control mercury releases, no federal regulations or pollution prevention plans have been proposed or issued for the coal fired sector despite the complete failure by provincial agencies to act (except Alberta).

Despite the fact that coal-fired power plants are Canada's largest source of industrial mercury emissions¹⁶, to date federal regulations for mercury control have been limited to the chlor-alkali sector.¹⁷

Federal laws now require that power plants monitor and report mercury emissions

Three years after identifying mercury as a priority substance for reduction, the federal government finally required that the coal fired sector industry start to monitor and report on their mercury emissions. In 2000 the federal government amended the *National Pollutant Release Inventory* (NPRI) monitoring and reporting requirements¹⁸ to require the mandatory monitoring and reporting of any releases or transfers from facilities manufacturing or emitting in excess of five kilograms of mercury annually¹⁹.

4. The federal (and provincial) governments have finally committed to targets for mercury emission reductions from the coal-fired sector

Canada Wide Standards

In 1998 the federal government through the Canadian Council of Ministers of the Environment (CCME) agreed that mercury be designated as one of five substances warranting priority action for management. A multi-stakeholder Management Advisory Group (MAG) was formed to develop a proposed Canada Wide Standard (CWS) for mercury emissions from coal-fired power plants, at that point the sector responsible for emitting the largest volume of mercury.

¹⁴ It should be noted that Alberta supplemented its efforts at the CCME table with a provincial based process to ensure expedited action.

¹⁵ Sections 56, 90(1.1), 92.1, 93 and 97.

¹⁶ *Taking Stock 2001, North American Pollutant Releases and Transfers*, Commission for Environmental Cooperation [www.cec.org]; <http://www.ccme.ca>

¹⁷ Chlor-Alkali Mercury Release Regulations, SOR 90/130.

¹⁸ Sections 46 and 48.

¹⁹ http://www.ccme.ca/initiatives/standards.html?category_id=5

The CCME set a target date of 1999²⁰ for a CWS for mercury emissions from the sector. This was further delayed to spring 2002²¹ rationalized on the basis of a new federal initiative to pursue a multi-pollutant approach (MERS) to managing emissions from the sector, inclusive of mercury. Following the fall 2001 MERS Workshop, seeing little hope of consensus for a multi-pollutant approach, the governments decided that given the critical need for action to reduce mercury emissions it would instead proceed with efforts to agree on a CWS in the absence of support for a multi-pollutant reduction approach.

In December 2001 the governments again decided to delay setting a CWS because of "information uncertainties" identified by the industry sector. The CCME announced a joint industry /government information gathering process, to be followed by a "review" in 2005.

In June 2003 the CCME Committee of Deputy Ministers finally committed:

- ◆ to develop a CWS for existing and new coal fired plants by 2005
- ◆ to reduce mercury emissions by 2010,
- ◆ to explore national capture in the range of 60-90% and
- ◆ to align with U.S. standards.²²

The CCME also stated their expectation that coal -fired electric power generators would take early action to reduce mercury emissions in Canada and advised they would give consideration to early actions. They undertook to consult with stakeholders in development of the CWS. A draft CWS was released for public comment in spring 2005. The public asked for deeper cuts by earlier dates on the basis that mercury is a bio-accumulating neurotoxin, has already been documented to be accumulating in the receiving environment and affordable technologies and approaches exist to significantly reduce mercury emissions and environmental loading.

Yet despite the commendable action by Alberta to issue regulations in spring 2006, a CWS was not issued until late August 2006. Meanwhile mercury emissions from Canada's coal-fired sector continue unabated.

It is important to understand that **a CWS is not a legally binding standard**. It merely establishes non-binding targets agreed to by signatory federal and/ or provincial and territorial governments. It provides no obligation for regulatory action. The intention and effect of this legal invention created under the tent of the *Harmonization Accord* has been to avoid federal regulatory action.

The *Harmonization Accord* provides that standards are to be imposed by the jurisdiction "best situated". Even if one were to concur with the perverse purpose and

²⁰ [Hhttp://www.mbnet.mb.ca/ccme/3c_priorities/3ea_harmonization/3ea2_cws/3ea.../3ea2i3.htm](http://www.mbnet.mb.ca/ccme/3c_priorities/3ea_harmonization/3ea2_cws/3ea.../3ea2i3.htm)H (2001)

²¹ *Electric Power Generation MERS Clean Air Workbook*, Chapter 3: Electricity Market Trends and Energy Policy Perspectives, Terms of Reference, July 19, 2001

²² Canadian Council for Ministers of the Environment, *Notice on a Canada Wide Standard for Mercury Emissions from Coal-fired Power Plants*, June 2003 at http://www.ccme.ca/assets/pdf/mercury_epg_notice_9june03_e.pdf

intent of this instrument which is to fetter the exercise of federal powers, one must readily agree that the federal government is very "well situated", in fact obligated, to assert its powers to regulate mercury emissions including:

- ◆ our international obligations and regional commitments
- ◆ existing federal powers and responsibilities under CEPA
- ◆ the determination made decades ago by federal authorities to designate mercury as a priority substance warranting urgent federal action to reduce and control
- ◆ with the exception of Alberta, no province has moved to regulate mercury emissions from coal-fired power plants or expressed any intent to do so in a timely manner
- ◆ the failure to impose regulatory requirements on sources outside Alberta provides rewards "free-riders"
- ◆ federal regulations in no way preclude provincial action. CEPA provides that any province may issue and enforce equivalent provincial regulations.

Environment Canada actively participated in negotiations for Alberta regulations for mercury emissions from the electricity sector

Environment was an active party to the negotiation of revised rules for managing emissions from the Alberta electricity sector, a management framework developed through a consensus process involving government, industry the public. The final consensus agreement²³ provides:

- ◆ that legally binding mercury control requirements be imposed on all specified coal fired power units
- ◆ that regulatory controls be implemented regardless of whether a CWS finalized
- ◆ that for existing units reductions be required equivalent to installing fabric filters and activated carbon at a specified injection rate
- ◆ that existing units must install the specified mercury controls or shut down by
- ◆ that the same reduction standards and requirement in this Framework document will those supported at the CCME CWS table
- ◆ that supplemental measures must be instituted to address any potential "hotspots" created because of coal fed emissions

The framework was endorsed by the Alberta cabinet in 2004 and in turn expeditiously implemented through provincial regulations²⁴ and a *Guide for Responding to Potential "Hotspots" Resulting from Air Emissions from the Thermal Electric Power Generation Sector*.²⁵

²³ *An Emissions Management Framework for the Alberta Electricity Sector Report to Stakeholders*, prepared by the Clean Air Strategic Alliance Electricity Project Team, November 2003
[<http://casahome.org>]

²⁴ *Mercury Emissions from Coal-fired Power Plants Regulation*, A.R. 34/2006
[<http://www3.gov.ab.ca/env/air/OGS/legislation>]

²⁵ http://www3.gov.ab.ca/env/air/pubs/EPT_Hotspots.pdf

5. Federal regulations are critical to trigger provincial action

Consultation on measures to reduce mercury emissions from the coal-fired sector have dragged on for more than a decade with little substantive results. Despite signing, then ratifying an international law binding Canada to take expedited action to reduce mercury emissions from the coal fired sector, the federal government has taken no regulatory action. Neither have any provinces other than Alberta.

Analyses of measures found to trigger new investment in pollution control all indicate that industry and investors respond best to government regulation.²⁶ There has been little evidence of voluntary action by the coal-fired industry to reduce its emissions. The industry instead concentrated its efforts to a concerted lobby to delay regulatory action. Alberta industries have finally started to put money into testing alternative, albeit now that Alberta decided to regulate. A recent report by the National Advisory Panel on Sustainable Energy Science and Technology apparently reveals that Canadian industrial average spending on research and development is only 3.8 % of revenues and an even more miserly 0.36 % for the electricity sector.²⁷ Meanwhile the New Government of Canada has cancelled previously committed federal contributions to research on cleaner energy, including a two major Saskatchewan studies to test "clean coal" technologies and a promise of \$538 million to phase out Ontario's coal fired plants. So much for federal commitment to cleaner coal.

As outlined above, CEPA specifically provides that any province that promulgates measures equivalent to a federal regulation and ensures public rights to compel investigations of offences under that provincial law, may seek an order of equivalency.²⁸ But this cannot occur unless and until the provinces move to promulgate mercury reduction measures. As Alberta has done.

In the interim, it is incumbent that the federal government assert its valid legislative authority and promulgate regulations for this sector. In addition to the regulatory groundwork laid by Alberta, regulatory action has already been taken by U.S. federal (although their measures are facing legal challenges) and countless US state level authorities.²⁹

A federal regulation can be drafted in quick order by referencing the extensive research and analysis commissioned in support of the CCME CWS and the Alberta

²⁶ See D.Saxe, *Environmental Offences, Corporate Responsibilities and Executive Liability* (Ontario: Canada Law Book Inc., 1990; Linda F. Duncan, ed., *Voluntary Compliance: A Survey of North American Experience* (Montreal: Commission for Environmental Cooperation, 1997); K. Harrison, "Is Cooperation the Answer? Canadian Environmental Enforcement in Comparative Context", (Spring 1995) Vol. 14, No. 2 *Journal of Policy Analysis and Management* 221; North East States for Coordinated Air Use Management (NESCAUM), *Environmental Regulation and Technology Innovation: Controlling Mercury Emissions from Coal-fired Boilers*, September 2000.[www.nescaum.org]

²⁷ Jeffrey Simpson, "Alberta's ambition: energy producer, carbon reducer", *The Globe and Mail*, November 16, 2006.

²⁸ Section 10.

²⁹ See Linda F. Duncan, *Summary Report on Canadian and American Legislative and Regulatory Initiatives for the Reduction of Mercury Emissions from Coal-fired Power Plants*, prepared for Alberta Environment, February 2005.[http://www3.gov.ab.ca/env/air/pubs/Legislative_Summary_Report.pdf]

regulatory processes. These reports include independent and professional analyses of the :

- ◆ efficacy and costing of alternative control technologies
- ◆ emission forecasting (and environmental loading)
- ◆ health and environmental impacts and
- ◆ the potential co- benefits of alternative control technologies to reduce emissions of other harmful emissions such as heavy metals and particulate.

If the New Government of Canada is truly committed to taking federal action to protect the health and well being of Canadians, in particular those exposed to coal fired plant emissions, it will without further delay Gazette a federal regulation to control mercury emissions from coal- fired power plants for public comment. The Alberta Regulation provides a model law. The government has already thoroughly met its obligations to consult the provinces and affected persons³⁰ (industry, public, First Nations³¹) through the decade long consultation processes. The federal law will benefit Albertans by also prescribing an emissions standard for new facilities (the current Alberta law only regulates existing units). The federal regulation will protect residents of Ontario, New Brunswick, Nova Scotia, Saskatchewan (and likely soon British Columbia) by also prescribing standards for plants burning lignite or bituminous coal or coal blends.³²

The health of future generations depends on it.

³⁰ The CCME appointed federal and provincial government, industry and public representatives to its Management Advisory Committee for the CWS for coal- fired plants. The intensive 3 year Alberta process under the wing of the Clean Air Strategic Alliance (CASA) included representatives federal and provincial governments, industry, health and environment NGOs, affected communities and First Nations. The federal MERs process involved representatives from all sectors.

³¹ The CCME established a separate committee of First Nation representatives for the CWS process.

³² Alberta power plants currently only burn subbituminous coal mined in the province.