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CHAPTER

Massachusetts Sierra Club

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March 21, 2013

Chairwoman Anne M. Gobi
Joint Committee on Environment, Natural Resources and Agriculture
State House, Room 473F
Boston, MA 02133

Chairman Marc R. Pacheco
Joint Committee on Environment, Natural Resources and Agriculture
State House, Room 312-B
Boston, MA 02133

Re: Legislation relative to mercury in the environment, H802, H814, H838, S388, S396

Dear Chairwoman Gobi, Chairman Pacheco, and Members of the Committee,

Thank you for providing this opportunity to offer our comments on the aforementioned bills. The Sierra Club wishes to express our strong support in favor of passing strong and effective legislation that will result in the elimination of mercury released into the environment.

The Sierra Club is the oldest and largest non-profit, non-partisan organization environmental organization in the country. With over a forty year history in this chapter, the Massachusetts Sierra Club represents about 22,000 members throughout the state and nearly one million nationwide. We fight for clean air, clean water, the preservation of the Commonwealth's most precious natural spaces, and healthy, vibrant communities.

Toxicity

Mercury is a persistent, bio-accumulative neurotoxin. In high doses, mercury kills. Hundreds of people died as a result of mercury poisoning in Minamata Japan in the 1950s. Even in very small doses, mercury can cause neurological and developmental damage to unborn babies and young children. In most cases, mercury attacks the brain and the nervous system. *Mercury makes you stupid.*

According to the United Nations Environmental Programme and the World Health Organization, there is no safe level of mercury.¹

Mercury and its compounds are highly toxic to humans, especially to the developing nervous system. They are also harmful to ecosystems and wildlife populations. Microbial metabolism of deposited mercury can create methylmercury, which has the capacity to collect in organisms (bioaccumulate) and to concentrate up food chains (biomagnify), especially in the aquatic food chain. Methylmercury is a well documented neurotoxicant, which may in particular cause adverse effects on the developing brain. It readily passes both the placental barrier and the blood-brain barrier; therefore, exposures during pregnancy are of highest concern. It may also cause adverse effects on the cardiovascular system, thereby leading to increased mortality. Methylmercury compounds are considered possible carcinogenic to humans according to the International Agency for Research on Cancer. Furthermore, inhalation of elemental

mercury vapour includes symptoms such as tremors, insomnia, memory loss, neuromuscular changes, and headaches. Kidney and thyroid may be affected.²

Mercury can do its damage vast distances away from the original source point. Arctic communities are nowhere near major mercury sources, yet mercury pollution is rampant in Arctic ecosystems and in the bodies of northern residents. Over 60 per cent of the residents of some Canadian Arctic communities have registered dangerous levels of mercury contamination in their bodies.

Recent scientific studies indicate that mercury is especially harmful to a developing human fetus. The only debate on this point is on the wisdom of pregnant women eating any fish at all.

Elimination from the Environment

Large mercury-emitting sectors have acted and are succeeding in achieving substantial reductions. For example, between 1995 and 1999, the Canadian primary base-metals sector reduced mercury emissions by 40%; municipal garbage incinerators reduced by 91%; hazardous waste incinerators reduced by 79%. However, during the same period, the electricity generating sector increased its mercury pollution by 62%, flying in the face of public health, environmental integrity and everyone else's good-faith efforts to control this toxin.

Public health and environmental advocates throughout North America have consistently recommended that electricity generators be required to reduce mercury emissions by 90 per cent by 2010. This goal is widely accepted as being achievable through a variety of potential options that include renewable energy, energy conservation, switching to less polluting fuels such as natural gas, and retrofit technologies applied to coal-fired generators.

It's time to realize that any practices that place mercury in the environment is an antiquated and destructive practice that should be cast into the past and cease to be part of our present.

The problem – and The Solution: A Bounty on Mercury-Containing Thermostats

In 2006, reacting to the health threat, Massachusetts, along with other states banned the sale of Mercury thermostats, which has resulted in a sharp decrease in the overall use of mercury nationwide. However, taking mercury thermostats off the market is only part of the solution. Tens of millions of mercury thermostats containing several hundred tons of mercury are still in use in U.S. homes and businesses. Our recovery rate of old thermostats is poor, despite the jingles being aired on some radio stations. Education campaigns alone historically do not provide significant compliance in any field. However, a bounty system that requires manufacturers to provide an incentive has been proven to multiply properly retuned thermostats tenfold.

We must continue to take steps to eliminate mercury contaminants from the waste stream. Old thermostats in buildings hold one of the largest reservoirs of mercury in the State. During building demolition or routine remodeling, thermostats are removed and replaced, creating a huge mercury waste stream. The Sierra Club therefore supports a requirement that the thermostat manufacturers pay a minimum of \$5 for each mercury thermostat brought to a designated collection center. This bounty would provide an incentive to motivate contractors and their technicians to use the thermostat collection system. We are convinced that such an incentive is needed. The collection system and incentives should also be extended to homeowner do-it-yourselfers either through existing collection centers (HVAC wholesalers or municipal universal waste sheds) or some new approach, for example, involving retailers. According to estimates, individual homeowners remove a quarter to a third of all thermostats.

Voluntary programs are traditionally ineffective. For example, the following account of a visit to a Lowe's store indicates what is being done – and NOT being done - on the retail level to raise consumer awareness and capture old mercury-containing thermostats.

I viewed products with the Energy Star symbol, but oddly, nowhere on the large display was there information regarding the need to be cautious in replacing old thermostats, the

need to dispose of them properly, or where to dispose of them. Some of the product packaging contained a mercury-free symbol while others did not. A chart produced by Honeywell listed the various thermostats available and indicated whether each product contained various features. It did contain a line indicating whether the product contains mercury. None did. The installation guide sold with the replacement thermostats that we purchased did contain a warning indicating that the old thermostat could contain mercury and that it should not be thrown in the trash. Consumers are directed to call their local waste management program for information on recycling and proper disposal. The packaging contained an 800-telephone number, which I called. The initial automated query was whether I was a homeowner. Once I indicated yes, the menu included a range of options including accessing technical information on the web, receiving documents via fax or email, how to find a local contractor, and frequently asked questions. The frequently answered questions included nine items. The last item was information regarding recycling mercury-containing thermostats. It directs the homeowner again to their local waste management program and/or a local contractor and again offers to help you find a contractor.

Summary

It's apparent that consumer information alone is not enough. Incentives, such as this bounty, are essential to making the program effective by encouraging consumers and contractors to properly dispose of this hazardous product. If the manufacturers are serious about taking responsibility for collecting old thermostats, they would institute a program that actually results in the return of mercury-bearing materials.

Because this proposed legislation would effectively address the poor collection rates of existing thermostats, the Sierra Club strongly supports this mercury elimination law and respectfully requests that this committee report these bills favorably. Furthermore, we hope that a strong bill with mandatory performance standards receives the full support by all members of the Senate and House of Representatives. It is only by the real commitment to the safe removal of the threat posed by mercury in our environment that we can achieve virtual mercury elimination.

Thank you for your consideration of this important amendment.

Respectfully,



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¹ United Nations Environmental Programme, Mercury Programme, Awareness Raising Package, http://www.chem.unep.ch/MERCURY/awareness_raising_package/default.htm. Retrieved May 3, 2011

² Zero Mercury Campaign, The European Environmental Bureau (EEB), Brussels, Belgium. Retrieved May 3, 2011