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Do You Feel the Breeze: Why the Window of Opportunity to Enact Meaningful Mercury Switch Removal Legislation Is Opening - and Closing

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Comments

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I. Introduction

For years, automobile manufacturers used mercury to make switches that would power the lights in hoods, trunks and glove compartments of cars and trucks.[1] When these cars containing mercury switches are sent to the junkyard, the mercury can be released when cars are crushed, or it can be released directly into the air when the scrap metal from the cars is melted down and recycled.[2] This poses a major problem as mercury is quite poisonous to humans and animals.[3]

This comment will discuss perhaps the least known major source of mercury pollution: exposure from scrapped automobiles. It will begin with an overview of mercury and its effects on humans, then discuss the process of how mercury gets from automobiles into the food chain. It will provide a thorough review of current legislative and administrative programs throughout the states that address mercury switches. The comment will also analyze a recent court decision upholding a first-in-the-nation law that requires automobile manufacturers to pay for the removal of mercury switches from cars and trucks before they are scrapped and recycled. Finally, it will discuss the impact of this recent court decision on proposed state laws.

II. What is Mercury?

Mercury (Hg), a naturally occurring element, is different from other common metals in that it exists as a liquid at ordinary temperatures.[4]

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1. MICHIGAN DEP'T OF ENVIRONMENTAL QUALITY, MICHIGAN MERCURY SWITCH STUDY 4, 7 (2002), *available at* http://www.deq.state.mi.us/documents/deq-ess-p2-mercury-michiganswitchstudy.pdf. Automobile manufacturers voluntarily phased out the use of mercury switches by model year 2003. The voluntary phase out may have had much to do with an impending European Union directive. *See* Council Directive 2000/53, art. 4, 2000 O.J. (L 269) 1, 2 (EC), *available at* http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_269/l_26920001021en00340042.pdf. Aside from mercury switches, mercury can be found in much smaller amounts in antilock brake systems (ABS), navigational lights, high intensity discharge headlights, vehicle entertainment systems, air bag sensors, and after-market security systems. It is estimated that at least 85% of mercury in cars comes from light switches. MICHIGAN DEP'T OF ENVIRONMENTAL QUALITY 4. This comment focuses on the largest source of mercury in cars, the mercury switch. For a listing of vehicle makes and models that have mercury-containing convenience light switches in the hood and/or trunk, *see Mercury Switch Vehicle Make & Model Guideline List*, PENNSYLVANIA DEP'T OF ENVIRONMENTAL PROTECTION, http://www.dep.state.pa.us/dep/deputate/pollprev/mercury/ModelList.doc.

2. OFFICE OF AIR QUALITY PLANNING, U.S. ENVIRONMENTAL PROTECTION AGENCY, MERCURY STUDY REPORT TO CONGRESS VOL. II: AN INVENTORY OF ANTHROPOGENIC MERCURY EMISSIONS IN THE UNITED STATES 4-47 (1997), *available at* http://www.epa.gov/ttn/oarpg/t3/reports/volume2.pdf.

3. H. RICHARD CASDORPH & MORTON WALKER, TOXIC METAL SYNDROME 134-35 (1995).

4. OFFICE OF AIR QUALITY PLANNING, U.S. ENVIRONMENTAL PROTECTION AGENCY,

Because of its liquid consistency and inexpensive price, automobile manufacturers used mercury to connect convenience light switches in cars and trucks.[5] The so-called "mercury switch" is a device used to connect an electrical circuit in which mercury moves to bridge two contacts. The mercury is usually moved by tilting the entire switch. For example, when a car trunk is opened, the liquid mercury flows within the switch to complete the electrical connection to illuminate the light.[6]

Mercury is persistent in that it cannot be destroyed through emissions control technologies, nor can it be destroyed by incineration.[7] For example, melting and recycling car metal simply turns mercury into a gas, which is released into the air and subsequently deposited back into the environment through rain and other forms of deposition.[8] Additionally, because of its transient nature, once released, mercury can travel long distances and impact distant sites.[9] Removing the switches from cars is important because if there were no mercury in cars, there would be no mercury emissions from the smelting process.

Once mercury enters the environment, it mixes with bacteria in the air and water to form methylmercury (MeHg), an organic form of mercury.[10] Fish are particularly susceptible to mercury contamination because they process contaminated water through their bodies. As a result, fish and other aquatic life forms are exposed to methylmercury, rapidly absorbing it into their systems.[11] However, methylmercury is metabolized very slowly and as a result remains in the fish tissue for long periods of time.[12]

Through a process called bioaccumulation, methylmercury increases in concentration up the aquatic food chain resulting in high concentrations of methylmercury in larger predatory fish such as tuna,

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MERCURY STUDY REPORT TO CONGRESS VOL. I: EXECUTIVE SUMMARY 2-1 (1997) [hereinafter MERCURY STUDY REPORT, VOL. I], *available at* http://www.epa.gov/ttn/oarpg/t3/reports/volume1.pdf. Mercury exists in three forms: elemental mercury, inorganic mercury, and organic mercury. This note deals with the most toxic form, organic mercury (methylmercury).

5. Byron Swift, *A Better, Cheaper Way to Regulate Mercury*, 29 ENV'T REP. 1721, 1721 (1999). Mercury can be purchased for approximately three dollars a pound. Each mercury switch contains about a gram of mercury.

6. *Another Major Source of Mercury Pollution: Light Switches in Scrapped Cars*, NATURAL RESOURCES DEFENSE COUNCIL, July 22, 2004, *available at* http://www.nrdc.org/media/pressreleases/040722.asp.

7. MERCURY STUDY REPORT, VOL. I, *supra* note 4, at 2-1.

8. *Id.* at 2-1 to 2-2.

9. NATIONAL RESEARCH COUNCIL, TOXICOLOGICAL EFFECTS OF METHYLMERCURY 15 (National Academy Press 2000), *available at* http://www.nap.edu/books/0309071402/html/15.html.

10. *Id.* at 1.

11. MERCURY STUDY REPORT, VOL. I, *supra* note 4, at 2-5.

12. NATIONAL RESEARCH COUNCIL, *supra* note 9, at 4.

shark, and swordfish.[13] As an example, small fish consume contaminated plants, building up a concentration of methylmercury in their systems. When larger, predatory fish consume the smaller fish, the concentration of methylmercury increases further because it is metabolized and excreted slowly.

Bioaccumulation can result in very high concentrations of methylmercury in fish, which is the main source of human exposure to mercury.[14] Since methylmercury concentrations increase up the food chain, large predatory fish may have mercury concentrations more than a million times higher than the surrounding water. Due to the positive properties of consuming fish, it is important to address the efforts to reduce mercury emissions as opposed to limiting fish consumption.

A. The Health Effects of Mercury

Many of us are familiar with the "Mad Hatter" from Lewis Carroll's *Alice in Wonderland.* While fictional, this character was based on the hat-makers ("milliners") of Victorian England who were exposed to mercury vapors while using quicksilver (mercurious nitrate) to manufacturer hats.[15] Due to this continual exposure to mercury vapors, milliners developed symptoms ranging from muscle spasms to hallucinations.[16] Exposure to mercury today comes mainly in the form of eating tainted fish such as tuna.[17] Subsequently, individuals who frequently consume fish run the highest risk of adverse affects.

The most pronounced effects of methylmercury are seen in the children of women who consumed large amounts of fish and seafood during pregnancy.[18] The U.S. Environmental Protection Agency (US EPA) has estimated that as many as one in six women have levels of mercury in their blood sufficiently high to pose a risk to a developing fetus.[19] This means that as many as 630,000 children each year may be

13. *Id.* at 1, 338.

14. *Id.* at 16. Approximately 95% of methylmercury in fish is absorbed from the gastrointestinal track. *Id.* at 33.

15. H. RICHARD CASDORPH & MORTON WALKER, *supra* note 3, at 132.

16. *Id.*

17. NATIONAL RESEARCH COUNCIL, *supra* note 9, at 13.

18. *Id.* at 9. The EPA reported that blood-mercury concentrations were seven times higher among women who reported eating nine or more fish/shellfish meals within the past thirty days (i.e. two or more times a week) compared with women who reported no fish/shellfish consumption in the past thirty days. Kathryn R. Mahaffey, U.S. Envtl. Prot. Agency, Address at the 2004 Fish Forum, Methylmercury: Epidemiology Update (2004), http://www.epa.gov/waterscience/fish/forum/2004/ presentations/ monday/mahaffey.pdf.

19. Zachary Corrigan, *Fishing for Trouble: How Toxic Mercury Contaminates Fish in U.S. Waterways*, CLEAR THE AIR, Oct. 2004, at 7, *available at* http://www.uspirg.org/reports/fishingfortrouble04/Fishing_for_Trouble2004.pdf.

at risk for neurological and developmental problems due to mercury exposure *in utero*.[20] Prenatal exposure has been associated with irreversible damage to the developing central nervous system, which affects children's ability to learn.[21] In adults, exposure to methylmercury can include changes in blood pressure, abnormal heart functions, and an increased risk of heart attack.[22]

In humans, methylmercury has an estimated half-life of 70-80 days.[23] This means that it takes the body 70-80 days to metabolize half of the methylmercury in the body. Subsequently, it will take the body 70-80 more days to metabolize the remaining half, and so on. The long half-life of methylmercury illustrates the ease in which it is able to accumulate and build up in concentration. Numerous states have recognized the importance of monitoring the consumption of fish that contain methylmercury.

In 2003, 45 states issued warnings about eating mercury-contaminated fish.[24] This is a large jump from 1993 when only 27 states issued similar warnings.[25] The warnings are serious. For example, in 2005, the Washington State Department of Health issued a health advisory recommending women of childbearing age and children under six to not eat *any* fresh caught or frozen tuna steaks, swordfish, shark or mackerel.[26] Additionally, the advisory recommends limiting consumption of canned tuna to six ounces (one can) per week for women, and three ounces for children.[27]

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20. Kathryn R. Mahaffey, U.S. Envtl. Prot. Agency, Address at the 2004 Fish Forum, Methylmercury: Epidemiology Update (2004), http://www.epa.gov/waterscience/fish/forum/2004/presentations/monday/mahaffey.pdf.

21. NATIONAL RESEARCH COUNCIL, *supra* note 9, at 17.

22. *Id.* These symptoms are associated with chronic low-dose exposure. Chronic high-dose exposures to methylmercury in adults can include tingling in the hands and feet, tremors, problems walking, dizziness, visual and hearing difficulties, and memory impairment.

23. NATIONAL RESEARCH COUNCIL, *supra* note 9, at 49-50.

24. U.S. ENVIRONMENTAL PROTECTION AGENCY, NATIONAL LISTING OF FISH ADVISORIES 4 (2004), *available at* http://www.epa.gov/waterscience/fish/advisories/factsheet.pdf.

25. U.S. ENVIRONMENTAL PROTECTION AGENCY, NATIONAL LISTING OF FISH ADVISORIES (2003), http://epa.gov/waterscience/presentations/fishslides/2003_files/frame.htm. In 1993, twenty-seven states issued 899 mercury advisories. In 2003, forty-five states issued 2,362 mercury advisories. The increase in advisories is not dispositive of increased pollution, but rather an increase in states testing their waters.

26. WASHINGTON STATE DEP'T OF HEALTH, STATEWIDE FISH ADVISORY FOR MERCURY (2005), http://www.doh.wa.gov/fish/FishAdvMercury.htm.

27. *Id.*

B. Mercury Switches

For years, many automobile manufacturers installed electrical light switches that contained small amounts of mercury in their vehicles.[28] Although automakers discontinued this practice in 2002, there are still hundreds of thousands of vehicles in operation throughout the United States that contain mercury switches.[29] Although the amount of mercury contained in each switch is small, the aggregate total considering all the vehicles containing mercury on the road is very large. For example, when General Motors stopped using mercury for under-the-hood convenience lamp switches in its Chevrolet Silverado pickup truck alone, it eliminated over one ton of potential mercury exposure to the environment per model year.[30] To put this in perspective, just one gram of mercury, the amount in one mercury switch, is enough to render all the fish unsafe to eat in a twenty acre lake.[31]

If auto recyclers do not remove mercury switches, the mercury contained in the switches can be released when vehicles are shredded and recycled at smelting facilities.[32] The shredding and smelting process can cause the mercury to be discharged into the atmosphere through smokestacks connected to smelting operations.[33] Once discharged into the air, mercury can cross state lines and pollute surrounding lands and waterways.[34] In fact, air emissions are the most significant pathway for mercury contamination.[35]

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28. MICHIGAN DEP'T OF ENVIRONMENTAL QUALITY, *supra* note 1.

29. *See* ECOLOGY CTR., CLEAN CAR CAMPAIGN, MERCURY IN VEHICLES UPDATE 3 (2004), *available at* http://www.cleancarcampaign.org/Mercury_April_2004.pdf.

30. Alliance of Auto. Mfrs. v. Kirkpatrick, No. Civ. 02-149-B-W, 2003 WL 21684464, at *1 (D. Me. July 17, 2003).

31. MICHIGAN DEP'T OF ENVIRONMENTAL QUALITY, MICHIGAN MERCURY SWITCH STUDY 4 (2002), *available at* http://www.deq.state.mi.us/documents/deq-ess-p2-mercury-michiganswitchstudy.pdf. For one organization's take on this oft-cited statistic, *see* THE INTERSTATE MERCURY EDUCATION AND REDUCTION CLEARINGHOUSE, ONE GRAM OF MERCURY CAN CONTAMINATE A TWENTY ACRE LAKE: A CLARIFICATION OF THIS COMMONLY CITED STATISTIC 1 (2004), *available at* http://www.newmoa.org/Newmoa/htdocs/prevention/mercury/mercurylake.pdf.

32. ECOLOGY CTR., CLEAN CAR CAMPAIGN, TOXICS IN VEHICLES: MERCURY 36 (2001), *available at* http://www.cleancarcampaign.org/pdfs/toxicsinvehicles_mercury.pdf. States that are home to many smelting operations include Pennsylvania (21), Ohio (12), Texas (12), Indiana (8), and Illinois (7).

33. OFFICE OF AIR QUALITY PLANNING, U.S. ENVIRONMENTAL PROTECTION AGENCY, MERCURY STUDY REPORT TO CONGRESS VOL. II: AN INVENTORY OF ANTHROPOGENIC MERCURY EMISSIONS IN THE UNITED STATES 4-47 (1997), *available at* http://www.epa.gov/ttn/oarpg/t3/reports/volume2.pdf.

34. *Id.* Once deposited on Maine land and water surfaces, the mercury can be converted into methylmercury, a neurotoxin that bio-accumulates as it progresses up the food chain.

35. *Kirkpatrick*, 2003 WL 21684464, at *2.

The aggregate amount of mercury released from switches is anything but small. Automobile scrapping is the fourth largest source of mercury pollution nationwide, behind waste incineration, coal-fired power plants and commercial/industrial boilers.[36] However, in some states, such as Pennsylvania, mercury switches from vehicles represent the second largest source of mercury emissions.[37]

Given the transient nature of mercury, it is important for states to have a uniform approach to prevent the release of mercury through the smelting process. A law which requires auto recyclers to remove mercury switches in one state does not guarantee that mercury from another state won't cross the border and contaminate its land and waterways.

Swift action is important. There is a limited window of opportunity to remove the mercury switches from cars manufactured before 2003. The percentage of cars which contain mercury switches will get smaller and smaller as the auto fleet is modernized. While U.S. Environmental Protection Agency regulations address mercury pollution from auto scrap yards, the regulations apply only to the largest facilities which process only 10% of the automobile scrap each year.[38] As a result, approximately 90% of the automobile scrap processed in the U.S. is unaffected by federal regulations.

III. Historical Developments of Mercury Switch Removal Laws

In response to the health threats posed by the release of mercury, several states have enacted a variety of programs and laws to, in the very least, encourage the removal of mercury switches from automobiles before they are sent to the junkyard.[39] However, the state approach to mercury switch removal has been anything but uniform. As a result, a coalition of environmental organizations and industries involved in vehicle recycling developed the Model Mercury-Free Vehicle Act.[40]

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36. ECOLOGY CTR., CLEAN CAR CAMPAIGN, TOXICS IN VEHICLES: MERCURY 44 (2001), *available at* http://www.cleancarcampaign.org/pdfs/toxicsinvehicles_mercury.pdf.

37. Lorraine McCarthy, *Automobile Recyclers, Scrap Dealers Agree on Program to Remove Mercury Switches*, 35 ENV'T REP. 2414, 2414 (2004). Pennsylvania has more smelting facilities than any other state in the nation with twenty-one. Both Ohio and Texas are home to the second most number of smelting facilities, with twelve each. *See* ECOLOGY CTR., *supra* note 32.

38. *Another Major Source of Mercury Pollution: Light Switches in Scrapped Cars*, NATURAL RESOURCES DEFENSE COUNCIL, July 22, 2004, *available at* http://www.nrdc.org/media/pressreleases/040722.asp.

39. U.S. ENVIRONMENTAL PROTECTION AGENCY, STATE CAR SWITCH PROGRAMS (2005), http://www.epa.gov/epaoswer/hazwaste/mercury/ntl-switch.htm.

40. PARTNERSHIP FOR MERCURY FREE VEHICLES, CLEAN CAR CAMPAIGN, MODEL MERCURY-FREE VEHICLE ACT, http://www.cleancarcampaign.org/pdfs/Hg_legis.pdf

A. Model Mercury-Free Vehicle Act

The Model Mercury-Free Vehicle Act (Act) requires vehicle manufacturers to establish and fund a system for the removal and safe management of mercury switches in both end-of-life vehicles (ELVs) and vehicles in commerce.[41] The Act mandates that an established plan must achieve a capture rate of at least 90%.[42] This is achieved by requiring manufacturers to submit an annual report to the state, and a requirement to alter the plan if the capture rate is not sufficient.[43] The Act places the cost of removal on vehicle manufacturers, requiring them to pay auto recyclers the prevailing rate manufacturers use to reimburse automotive dealers for replacing faulty switches under the manufacturer-dealer warranty program.[44] To the extent practical, the Act requires manufacturers to utilize existing dealerships and service stations in order to remove and or replace the mercury switches.[45] The Act also bans the sale of new vehicles that contain mercury switches manufactured after a state-specified date.[46]

B. State Efforts to Address Mercury Switches

Over the past several years, states across the nation have taken various measures to address the potential environmental and health risks posed by mercury switches in cars. State action has ranged from legislative edict to pilot administrative mercury switch removal programs.

1. Legislative Action

Several states have led the nation by enacting legislation that addresses the removal of mercury switches in vehicles. However, not all of the laws enacted mandate the removal of mercury switches. Most notable is Maine's mercury switch removal law with its first-in-the-nation requirement that automobile manufacturers establish consolidation facilities for the collection of mercury switches and for manufacturers to pay a three-dollar bounty for each switch recovered.[47] Part IV of this note addresses Maine's legislation, and the Commerce Clause challenge

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[hereinafter "Model Act"].

41. Model Act, *supra* note 40, § 4(a)(1).
42. Model Act, *supra* note 40, § 4(a)(2)(E).
43. Model Act, *supra* note 40, § 10.
44. Model Act, *supra* note 40, § 4(b)(1).
45. Model Act, *supra* note 40, § 4(a)(3).
46. Model Act, *supra* note 40, § 6(a).
47. ME. REV. STAT. ANN. tit. 38, § 1665-A (2005), *amended by* 2005 Me. Legis. Serv. Ch. 148, H.P. 136, L.D. 185 (2005).

that the Alliance of Automobile Manufacturers brought against it.[48]

Other states have enacted legislation encouraging scrap yards and auto recyclers to remove mercury switches, but not requiring it. In 2001, Governor Gray Davis of California signed the California Mercury Reduction Act of 2001.[49] The act requires scrap yards to properly handle mercury switches if they are removed from vehicles before they are crushed.[50] However, scrap yards are only encouraged to remove the switches.[51] The cost of removal falls onto the party electing to remove the switch.[52] The California law is also one of the first in the nation to ban the sale of new cars manufactured after January 1, 2005 that contain a mercury switch.[53]

In 2004, the Illinois Legislature passed a bill banning the sale of most new mercury-containing products, including mercury switches.[54] While the ban applies to mercury switches in consumer appliances and commercial products, it does not apply to switches in vehicles.[55] However, it requires the Illinois Environmental Protection Agency to submit a report to the Governor and the General Assembly evaluating programs that would reduce and recycle mercury from vehicle components.[56]

In 2003, the Minnesota Legislature passed a law that requires products that contain mercury to be reused, recycled, or properly managed.[57] However, the law does not apply to mercury switches found in motor vehicles.[58] The law only states that a person may not crush a motor vehicle unless that person has first made a good faith effort to remove all of the mercury switches in the motor vehicle.[59] The

48. Alliance of Auto. Mfrs. v. Kirkpatrick, No. Civ. 02-149-B-W, 2004 WL 305598, at *1 (D. Me. Feb. 17, 2004). Article I, Section 8, Clause 3 of the United States Constitution gives Congress the power "to regulate Commerce . . . among the several States." Courts have recognized that the so-called "Commerce Clause" places the power to regulate interstate commerce in the hands of Congress, thus restricting the ability of state and local governments to burden the national marketplace through local regulation or taxation.

49. CAL. HEALTH & SAFETY CODE § 25212 (2005).

50. CAL. HEALTH & SAFETY CODE § 25212(b).

51. CAL. HEALTH & SAFETY CODE § 25212(2)(i).

52. CAL. HEALTH & SAFETY CODE § 25212(2)(i).

53. CAL. HEALTH & SAFETY CODE § 25212. *See infra* note 179.

54. 415 ILL. COMP. STAT. ANN. 5/22.23b (2005).

55. 415 ILL. COMP. STAT. ANN. 5/22.23b(b)(5). A proposed version of the bill included language that would have prohibited any vehicle recycler from knowingly shredding or scrapping any end-of-life vehicle that contains any mercury-added component. S. 2551, 93rd Gen. Assem. (Ill. 2003).

56. 415 ILL. COMP. STAT. ANN. 5/22.23b(e).

57. MINN. STAT. ANN. § 116.92(4)(a) (2004).

58. MINN. STAT. ANN. § 116.92(3)(2).

59. MINN. STAT. ANN. § 116.92(4)(c).

Minnesota Legislature is currently considering a bill that would mandate a mercury switch removal program to be established by the Minnesota Office of Environmental Assistance, and funded by vehicle manufacturers up to a total maximum annual cost of $300,000.[60]

In 2001, Oregon passed a law, similar to California's, that prohibits the sale of new motor vehicles containing mercury switches after January 1, 2006.[61] The legislation also prohibits anyone from crushing a motor vehicle without first attempting to remove any mercury light switches found in the hood or trunk of the vehicle.[62] Additionally, the law requires the Oregon Department of Environmental Quality (ODEQ) to coordinate with motor vehicle repair shops to offer to the public the replacement and recycling of motor vehicle mercury light switches.[63] In doing so, ODEQ must coordinate and work with local agencies to provide technical assistance to businesses involved in the crushing of motor vehicles concerning the safe removal and proper disposal of mercury light switches from motor vehicles.[64]

In 2003, the state of Washington passed a law banning the sale of motor vehicles manufactured after January 1, 2006, if the motor vehicle contains a mercury switch.[65] However, the law contains no provisions for the disposal of mercury switches in vehicles currently on the road.

Taking note of the Alliance of Automobile Manufacturers' unsuccessful challenge to Maine's mercury switch removal legislation,[66] two states recently passed comprehensive mercury switch removal legislation requiring vehicle manufacturers to establish a mandatory mercury switch removal plan. In March 2005, the New Jersey Legislature enacted a comprehensive bill entitled the Mercury Switch Removal Act of 2005.[67] Designed after the Model Act, New Jersey's Act requires vehicle manufacturers to develop a "mercury minimization plan" which will be funded by the manufacturers of vehicles sold in the state.[68] Further, the Act provides for a minimum two-dollar bounty for each mercury switch removed by a scrap recycling facility.[69] The Act also requires manufacturers to cover the cost of packaging, shipping,

60. H.F. 1867, 83rd Reg. Sess. (Minn. 2003); H.F. 2028, 83rd Reg. Sess. (Minn. 2003).
61. OR. REV. STAT. § 815.097 (2005). *See infra* note 179.
62. OR. REV. STAT. § 459.900.
63. OR. REV. STAT. § 459A.630.
64. OR. REV. STAT. § 465.012 (2004), *amended by* Or. Laws Ch. 206, S.B. 43 (2005).
65. WASH. REV. CODE. ANN. § 70.95M.050(4) (2005).
66. *See* Part IV(A).
67. N.J. STAT. ANN. § 13:1E-99.82 (2005).
68. N.J. STAT. ANN. § 13:1E-99.85(d).
69. N.J. STAT. ANN. § 13:1E-99.85(d)(1).

storing, and recycling the switches.[70] Additionally, the Act requires manufacturers to report annually to the Commissioner of the New Jersey Department of Environmental Protection regarding the performance of the mercury minimization plan, including the capture rate of the plan and any alternatives to the plan.[71] Of importance, New Jersey's Act provides for both civil and criminal penalties for violations of the Act.[72]

In August 2005, Arkansas passed the Mercury Switch Removal Act of 2005.[73] Similar to New Jersey's Act, the Arkansas Act requires vehicle manufacturers to develop a "mercury minimization plan."[74] While the costs of the plan must be borne by the manufacturers of vehicles sold in the state, the Act also requires that manufacturers pay a minimum five-dollar bounty for each mercury switch removed by a scrap recycling facility.[75] The Act also requires manufacturers to report annually to the Arkansas Department of Environmental Quality regarding the performance of the mercury minimization plan, including the capture rate of the plan and any alternatives to the plan. Similar to New Jersey's Act, the Arkansas Act also provides for both civil and criminal penalties for violations of the Act.[76] Importantly, Arkansas' Act requires that manufacturers indemnify, defend, and hold harmless scrap recycling facilities for any liabilities arising from the release of mercury from the mercury switches after they are transferred to the manufacturer.[77]

2. Administrative Mercury Switch Removal Programs

Following the lead of states that have enacted legislation, several states have initiated voluntary programs administered through state environmental protection agencies. In Colorado, the Department of Public Health and Environment (CDPHE) initiated a voluntary mercury switch removal program in 2004.[78] After a year of implementation, the program has been met with various limitations and successes.[79] Funded

70. N.J. STAT. ANN. § 13:1E-99.85(d)(4)-(6).
71. N.J. STAT. ANN. § 13:1E-99.88(a).
72. N.J. STAT. ANN. § 13:1E-99.89(a)(2),(5).
73. ARK. CODE ANN. § 8-9-601 (2005).
74. ARK. CODE ANN. § 8-9-604(a).
75. ARK. CODE ANN. § 8-9-604(d)(2)(a).
76. ARK. CODE ANN. § 8-9-610(a).
77. ARK. CODE ANN. § 8-9-604(g).
78. COLORADO DEP'T OF PUBLIC HEALTH AND ENVIRONMENT, COLORADO'S EFFORTS AT MERCURY POLLUTION REDUCTION—GETTING MERCURY OUT OF CARS 31 (2004), *available at* http://www.cdphe.state.co.us/hm/mercury/switch/mercuryreductionefforts.pdf.
79. *See* COLORADO DEP'T OF PUBLIC HEALTH AND ENVIRONMENT, COLORADO'S SWITCH REMOVAL PROGRAM: LIMITATIONS AND SUCCESSES IN 2004—A FIRST YEAR

by a settlement agreement with a Colorado steel company, the voluntary program exceeded its initial goal of collecting 50% of mercury switches that could be collected in the state of Colorado.[80] The success of the program is due in part to its incentives, including free training to automobile recyclers, environmental compliance assistance for participants, and public recognition via environmental compliance awards.[81] Further, once the mercury switches are removed, the CDPHE provides for their transportation to recycling or disposal sites.[82] However, the program has been limited by inaccurate record keeping and funding.[83]

The Connecticut Department of Environmental Protection has worked in cooperation with the Connecticut Auto Recyclers Association on a voluntary program where the recyclers would remove and recycle used mercury switches from vehicles.[85] However, little information is available on the status of the program.

The Delaware Department of Natural Resources and Environmental Control has issued guidance materials to scrap yards, encouraging them to properly store and recycle mercury switches.[86] However, aside from

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EVALUATION 1 (2005), *available at* http://www.cdphe.state.co.us/hm/mercury/switch/conferenceresults2004.pdf.

80. *Id.* at 4, 11. Colorado's mercury switch removal program is funded by a $600,000 settlement agreement with CF&I Steel L.P.

81. *Id.* at 6.

82. COLORADO DEP'T OF PUBLIC HEALTH AND ENVIRONMENT, COLORADO'S EFFORTS AT MERCURY POLLUTION REDUCTION—GETTING MERCURY OUT OF CARS 31 (2004), *available at* http://www.cdphe.state.co.us/hm/mercury/switch/mercuryreductionefforts.pdf.

83. *Id.* at 21; COLORADO DEP'T OF PUBLIC HEALTH AND ENVIRONMENT, COLORADO'S SWITCH REMOVAL PROGRAM: LIMITATIONS AND SUCCESSES IN 2004—A FIRST YEAR EVALUATION 9 (2005), *available at* http://www.cdphe.state.co.us/hm/mercury/switch/conferenceresults2004.pdf.

85. NORTHEAST WASTE MANAGEMENT OFFICIALS' ASSOCIATION, MERCURY REDUCTION PROGRAMS—CONNECTICUT DEP'T OF ENVIRONMENTAL PROTECTION (2001), http://www.newmoa.org/Newmoa/htdocs/prevention/mercury/programs/ index.cfm (follow "By State" hyperlink; then follow "Mercury Collection Campaign—Connecticut Dept. of Environmental Protection" hyperlink); *see also Targeting Mercury*, CONNECTICUT DEP'T OF ENVIRONMENTAL PROTECTION (2002), http://www.dep.state.ct.us/wst/p2/p2view/targetmerc.htm.

86. DELAWARE DEP'T OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL, WASTE HANDLING, STORAGE AND DISPOSAL PRACTICES 23 (2003), *available at*: http://www.dnrec.state.de.us/dnrec2000/divisions/awm/hw/hw/pdf/salvage2.pdf.

the guidance materials, there is no additional encouragement to recycle mercury switches.

As an incentive for automobile recyclers, the Florida Department of Environmental Protection certifies scrap yards that practice proper management practices, which includes participating in a voluntary mercury switch recycling initiative.[87]

The state of Indiana has a voluntary mercury switch removal program.[88] While the program does not require auto recyclers to remove mercury switches, the Indiana Department of Environmental Management highly recommends it.[89] The compliance manual they issued lists companies that will accept and transport mercury switches.[90]

In 2001, New York initiated a pilot program to recycle mercury switches from vehicles.[91] The voluntary program was designed to remove mercury switches from both end-of-life vehicles and from cars still on the road.[92] While the pilot program covered the cost of transporting and recycling the mercury switches, removing the switches for no compensation was not universally accepted by the participating recycling entities.[93] Additionally, the program has had difficulty eliciting the public's interest and participation in a voluntary mercury switch replacement program.[94]

In 2004, the Pennsylvania Department of Environmental Protection established a voluntary two-year mercury switch removal program.[95] Under the voluntary program, auto recyclers will receive a bounty, funded by the Pennsylvania DEP, for each switch removed.[96]

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87. FLORIDA DEP'T OF ENVIRONMENTAL PROTECTION, AN ENVIRONMENTAL COMPLIANCE WORKBOOK FOR AUTOMOTIVE RECYCLERS 21 (2002), *available at* http://www.dep.state.fl.us/central/Home/Green_Yards/Compliance_Wkb_SalvageYards.pdf.

88. INDIANA DEP'T OF ENVIRONMENTAL MANAGEMENT, COMPLIANCE MANUAL FOR INDIANA'S AUTO SALVAGE FACILITIES 30-31 (2003), *available at* http://www.in.gov/idem/autosalvage/manual/docs/auto_salvage_manual.pdf.

89. *Id.*

90. *Id.* at 74-75.

91. *Automotive Mercury Switch Recycling Project*, NEW YORK STATE DEP'T OF ENVIRONMENTAL CONSERVATION (2001), http://www.dec.state.ny.us/website/ppu/p2autosw.html.

92. *Id.*

93. *Id.*

94. *Id.*

95. PENNSYLVANIA DEP'T OF ENVIRONMENTAL PROTECTION, MEMORANDUM OF UNDERSTANDING 2 (2004), *available at* http://www.dep.state.pa.us/dep/deputate/pollprev/mercury/ MOUMercuryEmissions.pdf.

96. *DEP, Automobile-Recycling Industry, Environmental Groups Launch Mercury-Reduction Plan*, PENNSYLVANIA DEP'T OF ENVIRONMENTAL PROTECTION, Nov. 9, 2004, http://www.dep.state.pa.us/newsreleases/default.asp?ID=3192; *see also Mercury Switch Removal Program*, PENNSYLVANIA DEP'T OF ENVIRONMENTAL PROTECTION (2005), http://www.dep.state.pa.us/dep/deputate/pollprev/mercury/mercuryswitch.htm.

In 1998, the Vermont Legislature passed a law requiring certain categories of mercury-added products to be labeled prior to "sale for use" in the state of Vermont, including mercury switches.[97] However, the law did not require the removal of mercury switches. In 2001, the Vermont Department of Environmental Conservation (VDEC) initiated a voluntary program offering a bounty for the removal of mercury switches from end-of-life vehicles.[98] However, the funding for a bounty quickly ran out.[99] Of significance, an advisory committee on mercury pollution in Vermont noted that monetary incentives alone do not seem to work, and that the only successful method to collect mercury-added products may be through enacting legislation.[100] In 2005, the Vermont Legislature amended its mercury-added products law providing for a ban on the sale of new vehicles containing mercury switches by January 1, 2007,[101] and requiring the Vermont Agency of Natural Resources to conduct a study in order to make recommendations for the removal and collection of mercury switches.[102]

In 2004, the Virginia Department of Environmental Quality initiated a voluntary partnership program for vehicle salvage yards.[103] The Virginia DEQ will provide a "mercury switch collection kit" for the first fifty salvage yards that volunteer.[104]

The Wisconsin Department of Natural Resources developed a voluntary mercury switch removal program to remove switches from end-of-life vehicles.[105] While the program is voluntary, auto recyclers in

97. VT. STAT. ANN. tit. 10, § 6621d(a)(2), *amended by* 2005 Vermont Laws P.A. 13 (S. 84) (2005). Fluorescent lighting manufacturers challenged Vermont's labeling law, claiming that labeling bulbs solely for Vermont consumers is too costly. A federal appeals court upheld the law, vacating an earlier injunction issued by a lower court, granting lamp manufacturers an exemption from the law. Nat'l Elec. Mfrs. Ass'n v. Sorrell, 272 F.3d 104 (Vt. 2001).

98. VERMONT AGENCY OF NATURAL RESOURCES, ADVISORY COMMITTEE ON MERCURY POLLUTION (2002), http://www.anr.state.vt.us/dec/ead/mercury/acmp/minutes/2002/2002-11-19.htm.

99. *Id.*

100. *Id.*

101. VT. STAT. ANN. tit. 10, § 6621d, *amended by* 2005 Vermont Laws P.A. 13 (S. 84) (2005) (current version at VT. STAT. ANN. tit. 10, § 7105 (2005)). The Vermont Agency of Natural Resources must report to the Vermont General Assembly by January 15, 2006.

102. VT. STAT. ANN. tit. 10, § 6621d, *amended by* 2005 Vermont Laws P.A. 13 (S. 84) (2005) (current version at VT. STAT. ANN. tit. 10, § 7107(d) (2005)).

103. VIRGINIA AUTOMOBILE RECYCLERS ASSOCIATION, REMOVING MERCURY SWITCHES: A VOLUNTARY PARTNERSHIP BETWEEN VARA AND THE DEQ 1 (2004), *available at* http://www.deq.virginia.gov/p2/mercury/documents/VARAnews1204.pdf.

104. *Id.* at 3.

105. WISCONSIN DEP'T OF NATURAL RESOURCES, WISCONSIN AUTO AND APPLIANCE MERCURY SWITCH RECYCLING PROJECT (2005), http://www.dnr.state.wi.us/org/caer/cea/assistance/scrap/switches/index.htm.

the state are required to have storm water permits which regulate mercury in storm water discharges.[106] The program is scheduled to run through September 2004.[107]

3. Pending Action

A number of state legislatures have considered laws that would require the removal or mercury switches from vehicles. In 2003, the Massachusetts Legislature considered legislation that would have required vehicle manufacturers to establish recycling programs to remove mercury switches from end-of-life vehicles and phase out the use of mercury components in new vehicles.[108] The legislation included most of the provisions of the Model Mercury-Free Vehicle Act.[109] However, the bill was not passed.

The Michigan Department of Environmental Quality, in cooperation with vehicle manufacturers, extensively studied the issue of mercury switches.[110] The study evaluated the technical, logistical, and procedural factors associated with the removal of mercury convenience light switches from end-of-life vehicles and subsequent management of the switches.[111] Michigan legislators are currently considering a bill that will require vehicle manufacturers to implement a program to remove, collect, and recover mercury switches before the dismantling or crushing of end-of-life vehicles.[113] The cost of implementing such a program in Michigan would fall on the manufacturers.[114] Additionally, the law would require vehicle manufacturers to pay a one dollar bounty on all

106. WISCONSIN DEP'T OF NATURAL RESOURCES, INVENTORY OF AIR QUALITY-RELATED VOLUNTARY INITIATIVES (2003), http://www.dnr.state.wi.us/org/aw/air/voluntary/FinalVI_inventory.htm; WISCONSIN DEP'T OF NATURAL RESOURCES, STORM WATER DISCHARGE PERMITS AND THE COOPERATIVE COMPLIANCE PROGRAM FOR AUTO RECYCLERS AND SCRAP AND WASTE RECYCLERS (2004), http://www.dnr.state.wi.us/ org/caer/cea/assistance/scrap/stormwater/index.htm.

107. WISCONSIN DEP'T OF NATURAL RESOURCES, INVENTORY OF AIR QUALITY-RELATED VOLUNTARY INITIATIVES (2003), http://www.dnr.state.wi.us/org/aw/air/voluntary/FinalVI_inventory.htm.

108. H.B. 1906, 183rd Gen. Ct. (Mass. 2003); H.B. 3003, 183rd Gen. Ct. (Mass. 2003).

109. Model Act, *supra* note 40.

110. MICHIGAN DEP'T OF ENVIRONMENTAL QUALITY, MICHIGAN MERCURY SWITCH STUDY 1, (2002), *available at* http://www.deq.state.mi.us/documents/deq-ess-p2-mercury-michiganswitchstudy.pdf.

111. *Id.* The study concluded that the average removal time for a mercury switch from a vehicle was 95 seconds. *Id.* at 16. For a video showing the removal of a mercury switch, *see Switch Removal Video*, PENNSYLVANIA DEP'T OF ENVIRONMENTAL PROTECTION, ftp://ftp.state.pa.us/pub/dep/WEB/mercury/MercurySwitch.wmv.

113. H.B. 5956, 92nd Leg., Reg. Sess. (Mich. 2003).

114. *Id.*

mercury switches.[115] The bounty would help cover the cost of removal of the mercury switches by vehicle recyclers.[116] In May 2004, the bill was referred to the Committee on Land Use and Environment, where it still stands.[117]

A Mississippi bill that would have banned the sale of vehicles with mercury switches, the sale of a used vehicle without removing mercury switches, and the sending of a vehicle to a scrap yard without removing mercury components, died in committee in March 2004.[118] The bill would have required vehicle manufacturers to establish and maintain a mercury switch removal program which included training on how to remove the switches.[119] The bill was reintroduced in committee in January 2005.[120]

In 2003, legislators in New Hampshire considered a bill that would have required vehicle manufacturers to develop and implement a system to remove, replace where possible, and collect and recover mercury switches from ELVs and vehicles still on the road.[121] Under the bill, vehicle manufacturers would have been required to cover the cost of labor to remove the mercury switches, in addition to the cost of shipping, storing and or recycling them.[122] The bill was not passed, and has yet to be reconsidered.

In 2003, the New York legislature considered a bill containing similar provisions to the Model Mercury-Free Vehicle Act.[123] However, no action was taken on the bill.

Ohio conducted a study on mercury emitted by scrap metal recycling plants.[124] The report mentioned that the larger urban areas of the Midwest and the Ohio Valley are among the areas that have the highest concentration of mercury from anthropogenic sources.[125] The report indicates that mercury switches in cars and appliances are the main cause of mercury emissions from these facilities and recommends that a voluntary program be in place to remove mercury switches before

115. *Id.*
116. *Id.*
117. *House Bill 5956*, MICHIGAN LEGISLATURE, May 27, 2004, http://www.michiganlegislature.org/mileg.asp?page=getObject&objName=2004-HB-5956&queryid=8979861&highlight=.
118. S. 2955, 2004 Reg. Sess. (Miss. 2004).
119. *Id.*
120. S. 2569, 2005 Reg. Sess. (Miss. 2005).
121. S. 185, 158th Gen. Ct. (N.H. 2003).
122. *Id.*
123. A. 6259, 226th Leg. Sess. (N.Y. 2003).
124. OHIO ENVIRONMENTAL PROTECTION AGENCY, MERCURY CONTAMINATION FROM METAL SCRAP PROCESSING FACILITIES 1 (2004), *available at*: http://www.epa.state.oh.us/dapc/atu/mercpaper.pdf.
125. *Id.* at 3.

shredding.[126]

In 2004, the Rhode Island Senate introduced a bill substantially similar to the Model Mercury-Free Vehicle Act.[127] While the bill was not passed, the Rhode Island Senate has subsequently encouraged a Mercury Reduction Oversight Commission to develop a plan to address the collection and recycling of mercury switches, which could include any legislation necessary to implement the plan that utilizes manufacturer responsibility.[128]

4. Maine's Mercury Switch Removal Law in Practice

Shortly after Maine enacted its first-in-the-nation legislation requiring automobile manufacturers to, among other things, pay a one dollar bounty[129] for mercury switches recovered from their vehicles, a trade association of nine car and light truck manufacturers brought suit against the Commissioner of the Maine Department of Environmental Protection.[130] The Alliance of Automobile Manufacturers[131] (Alliance) charged that the law violated the Commerce Clause of the United States Constitution.[132] In finding that the law was constitutional, the United States District Court for the District of Maine held that while the law does place a burden on out of state industry, a rational nexus existed between the law and the automobile manufacturers prior conduct.[133]

Maine's mercury switch removal law is different from both the Model Mercury-Free Vehicle Act and legislation from other states in a few key areas. Under the law, automobile manufacturers are required to pay a minimum three dollar bounty to automobile recyclers for the removal, storage and transport of each switch.[134] On the other hand, the

126. *Id.* at 9.

127. S. 2453, 2003-2004 Leg. Sess. (R.I. 2003).

128. S. 3209, 2003-2004 Leg. Sess. (R.I. 2003).

129. Amended in 2005, the Maine legislation now provides for a minimum three dollar bounty for each mercury switch brought to a consolidation center, and a minimum four dollar bounty for a switch if the vehicle identification number of the source vehicle must be provided to match the switch to a manufacturer. ME. REV. STAT. ANN. tit. 38, § 1665-A (2005), *amended by* 2005 Me. Legis. Serv. Ch. 148, H.P. 136, L.D. 185 (2005).

130. Alliance of Auto. Mfrs. v. Kirkpatrick, No. Civ. 02-149-B-W, 2003 WL 21684464, at *1 (D. Me. July 17, 2003).

131. The Alliance of Automobile Manufacturers is a trade association made up of nine car and light truck manufacturers including BMW Group, DaimlerChrysler, Ford Motor Co., General Motors, Mazda, Mitsubishi Motors, Porsche, Toyota and Volkswagen. For additional information on the Alliance of Automobile Manufacturers, *see* http://www.autoalliance.org/about/.

132. *Kirkpatrick*, 2003 WL 21684464, at *1. *See supra* note 48.

133. *Kirkpatrick*, 2003 WL 21684464, at *4, n.9.

134. ME. REV. STAT. ANN. tit. 38, § 1665-A(5)(B), *amended by* 2005 Me. Legis. Serv. Ch. 148, H.P. 136, L.D. 185 (2005).

Model Act requires manufacturers to pay auto recyclers the prevailing rate manufacturers use to reimburse automotive dealers for replacing faulty switches under the manufacturer's dealer warranty program.[135]

The Model Act goes further than Maine's law in holding automobile manufacturers liable for the cost of removing and handling mercury switches. The Model Act requires manufacturers to pay for the shipping of switches between the recycling facility and storage or disposal facilities.[136] Under Maine's law, the individual recycling facilities must transport the switches themselves.[137] While the three dollar bounty goes towards compensating the recycling facilities for the transportation, it does not cover the industry's full cost.[138]

Once removed, the switches are taken to consolidation facilities which are established and maintained by the automobile manufacturers. Maine's law is more specific than the Model Act, mandating that the consolidation facilities must be geographically located to serve all areas of the state, and that the facilities may not be a new or used automobile dealership.[139] The Model Act only encourages manufacturers to utilize the existing ELV recycling infrastructure to the extent possible.[140] Maine's law is more restrictive, prohibiting manufacturers from using their respective dealerships as consolidation facilities. This ensures that the manufacturers obligation is not pawned off on local dealerships.[141] Upon passage of the law, manufacturers contracted with preexisting waste management and recycling centers to fulfill their obligations under the law.[142]

This is one area in which Maine's mercury removal law has a practical advantage over the Model Act. Instead of using existing dealerships and recycling facilities to the "extent practical," Maine's law consolidates the number of establishments manufacturers may use to receive mercury switches. By "consolidating" the number of establishments, it reduces the number of facilities the Maine Department of Environmental Protection (MDEP) must inspect for compliance.[143] If the law allowed manufacturers to use their respective dealerships, it would pose an administrative burden not only on the MDEP, but also on

135. Model Act, *supra* note 40, § 4(b)(1).
136. Model Act, *supra* note 40, § 4(b)(4).
137. ME. REV. STAT. ANN. tit. 38, § 1665-A(5)(A).
138. *Kirkpatrick*, 2003 WL 21684464, at *4.
139. ME. REV. STAT. ANN. tit. 38, § 1665-A(5)(A).
140. Model Act, *supra* note 40, § 4(a)(4).
141. *Kirkpatrick*, 2003 WL 21684464, at *14.
142. *Id.* at *4.
143. It is estimated that Maine is home to between 700 to 800 recycling/dismantling operations. *Kirkpatrick*, 2003 WL 21684464, at *2. The manufacturers' adopted plan establishes two consolidation facilities. *Kirkpatrick*, 2003 WL 21684464, at *4.

the automobile recyclers.[144] Having a small number of consolidation facilities also simplifies where recyclers may send the mercury switches to obtain payment.[145] Additionally, the consolidation provision helps the MDEP ensure that the recovered switches are handled in compliance with the state's universal waste rules.[146]

Upon removal of the switch, vehicle recyclers are required to record the vehicle identification number of the source vehicle in order to allocate responsibilities among the automobile manufacturers.[147] Additionally, Maine's law mandates that once removed, recyclers cannot be required to segregate switches according to each manufacturer.[148] Like the consolidation provision, this requirement eases the administrative burden on recyclers.

The Alliance estimates that its members incurred approximately $200,000 in start up costs to "establish" consolidation facilities, and it projects that annual costs to maintain the program will be $120,000.[149]

IV. Court Challenges to Mercury Switch Removal Laws

A. Alliance of Automobile Manufacturers v. Kirkpatrick

The Alliance challenged Maine's law under the Commerce Clause of the U.S. Constitution, arguing that the law is protectionist and discriminatory in nature in that it imposes financial burdens on out-of-state automobile manufacturers in order to subsidize Maine's domestic ELV industry.[150] The court examined the law under the "undue burden test" established in *Pike v. Bruce Church, Inc.*, 397 U.S. 137 (1970).[151] The undue burden test provides that if a state law that regulates a legitimate local public interest has an incidental effect on interstate commerce, the law will be upheld unless the burden on commerce is clearly excessive in relation to the putative local benefits.[152]

In *Pike*, the Court established two significant propositions regarding the Commerce Clause. First, health and safety regulations are more tenable than standard economic regulation.[153] Put another way, a state

144. The Maine Department of Environmental Protection has allocated only three employees to implement the act. *Kirkpatrick*, 2003 WL 21684464, at *15.
145. *Id.* at *13.
146. *Id.* at *14.
147. ME. REV. STAT. ANN. tit. 38, § 1665-A(5)(D).
148. *Id.*
149. *Kirkpatrick*, 2003 WL 21684464, at *4.
150. *Kirkpatrick*, 2003 WL 21684464, at *1. *See supra* note 48.
151. *Kirkpatrick*, 2003 WL 21684464, at *10-11. *See infra* note 153.
152. Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970).
153. *Pike*, 397 U.S. at 143. The Court in *Pike* held that when health and safety

law which regulates health and safety will have greater leeway to impose incidental burdens on interstate commerce than would a state law regulating economic interests. Second, courts will look with suspicion upon state statutes that require business operations to be performed in one state that could more efficiently be performed elsewhere.[154]

Using the Commerce Clause as a backdrop, the Alliance objected to the requirement that manufacturers must establish and maintain consolidation facilities, claiming that it has forced the manufacturers to open recycling businesses in Maine.[155] The Alliance argued the law should be stuck down because it imposes an excessive burden on interstate commerce, requiring out-of-state manufacturers to subsidize the in-state recycling industry.[156]

The court disagreed, holding that Maine's law does not force the manufacturers to "open recycling businesses," it only requires that switch consolidation take place in the state.[157] The court reinforced this by citing to the fact that the manufacturers did not "build" consolidation facilities, they simply contracted with domestic waste and recycling centers to fulfill their obligations.[158] Additionally, the court found that the law does not impose an excessive burden because the costs are shared by at least three major automobile manufacturers, and the objective is clearly related to the health and safety of the citizens of Maine.[159] It is important to note that the Alliance would have had a much stronger argument if any of the manufacturers had some type of recycling or consolidation facility outside the state of Maine, or if they could have shown that consolidation in Maine unnecessarily reroutes the switches

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regulations were at issue, states could place somewhat greater burdens on interstate commerce than might otherwise be acceptable under standard economic regulation.

154. *Id.* at 145.

155. *Kirkpatrick*, 2003 WL 21684464, at *12.

156. *Id.* The Alliance analogized the requirement to establish consolidation facilities in Maine to the requirement at issue in *Pike v. Bruce Church, Inc.* In *Pike*, an Arizona law required that all cantaloupes grown in Arizona and destined for commercial sale were to be packaged in a way approved by Arizona state inspectors. Bruce Church, Inc., was a farming operation that grew cantaloupes in Arizona, but packaged them in California because of the proximity of California's packaging plants. Bruce Church, Inc. brought suit when an Arizona state inspector prohibited the company from packaging the cantaloupes in California, but labeling them as grown in Arizona. Arizona claimed that it had a legitimate interest in preserving the reputation of Arizona growers by prohibiting deceptive packaging. While the court agreed that this was a legitimate interest, it struck down the law holding that the statute as applied would have created an excessive burden on interstate commerce by requiring Bruce Church, Inc. to build a packaging plant in Arizona.

157. *Kirkpatrick*, 2003 WL 21684464, at *12.

158. *Id.* Unlike *Pike*, the regulation at issue does not require manufacturers to conduct in Maine any interstate commercial operations that they would otherwise conduct outside the state.

159. *Kirkpatrick*, 2003 WL 21684464, at *13.

from another intended market destination.[160]

In a related Commerce Clause argument, the Alliance objected to the prohibition on using domestic dealerships as consolidation facilities, claiming that it imposes an excessive burden on interstate commerce.[161] The court did not agree, holding that there is a rational basis for ensuring that the manufacturers' obligation is not pawned off on local dealerships.[162] Again, the Alliance would have had a much stronger argument if it could have shown that there are dealerships willing to serve as consolidation centers.[163]

The Alliance also objected to the one dollar bounty[164] provision, claiming that it imposes an excessive burden on interstate commerce by requiring out-of-state manufacturers to pay money to in-state businesses.[165] However, the court disagreed, finding that the bounty provision does nothing to disrupt interstate markets or the movement of goods destined for interstate markets.[166] Additionally, the court found that the requirement does nothing to protect in-state business from competition.[167] It is not excessively burdensome to impose on those who placed mercury switches in interstate commerce a reasonable financial obligation to take the switches out.[168]

Finally, the Alliance challenged the provision which prevents manufacturers from implementing a plan that would require recyclers to segregate switches according to manufacturer. The Alliance claimed that the non-segregation provision skews the law in favor of local interests, thus imposing an excessive burden on interstate commerce.[169] However, similar to the requirement for consolidation facilities, the court held that the non-segregation provision rationally facilitates the recyclers' handling and shipping of mercury switches.[170] The non-segregation provision advances the objective of the law by streamlining the process that recyclers must follow, thus increasing the likelihood of compliance.[171] Additionally, the requirement that recyclers label switches with the vehicle identification number of the originating automobile addresses the concern of allocating costs among

160. *Id.* at *8, *12.
161. *Id.* at *13-14.
162. *Id.* at *14.
163. *Id.*
164. *See supra* note 129.
165. *Kirkpatrick*, 2003 WL 21684464, at *13.
166. *Id.*
167. *Id.*
168. *Id.*
169. *Kirkpatrick*, 2003 WL 21684464, at *14.
170. *Id.*
171. *Id.*

manufacturers.

B. Implications: The Window of Opportunity

While the ruling in *Alliance of Automobile Manufacturers v. Kirkpatrick*[172] may appear to give states the green light to impose the costs of mercury switch removal programs upon manufacturers, it is unclear whether states will be quick to act. The recent mercury switch removal legislation enacted by both New Jersey and Arkansas gives hope to increased state uniformity. However, given the long history of litigation between vehicle manufacturers and the states,[173] it is probable that this is not the final word from the courts. This is unfortunate.

The window of opportunity to remove mercury switches from cars is running out. It is estimated that over 8.4 million mercury switches are contained in cars that were retired in 2003 alone.[174] This represents a total of over 18,000 pounds of mercury.[175] The longer states wait to take action, the more mercury there will be released.

The most common legislative action has been the prohibition of the sale of new vehicles containing mercury switches after a specified date.[176] Undoubtedly this is a step in the right direction, but unfortunately may only be seen as a political one. Automobile manufacturers "voluntarily" decided to phase out mercury switches in cars by the end of the 2002 model year. That decision may have had more to do with the European Union directive passed in 2000 requiring mercury switches to be phased out by July 1, 2003,[177] than with any environmental stewardship on behalf of the manufacturers. That being said, Oregon's first-in-the-nation law banning the sale of any new vehicle manufactured after January 1, 2006 containing a mercury switch[178] was more an eventuality of the market than the imposition of Oregonian will.[179] Although the ban on selling cars with mercury

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172. No. Civ. 02-149-B-W, 2003 WL 21684464, (D. Me. July 17, 2003).

173. *See* Alliance of Auto. Mfrs. v. Gwadosky, 304 F.Supp.2d 104, 106 (2004) (referencing over three decades of an "elaborate and contentious game of economic, political, and legal chess").

174. ECOLOGY CTR., CLEAN CAR CAMPAIGN, MERCURY IN VEHICLES UPDATE 3 (2004), *available at* http://www.cleancarcampaign.org/Mercury_April_2004.pdf.

175. *Id.*

176. *See* Part III(B)(1).

177. Council Directive 2000/53, art. 4, 2000 O.J. (L 269) 1, 2 (EC), *available at* http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_269/l_26920001021en00340042.pdf. All automobile manufacturers selling vehicles in the European Union are required to comply with this directive.

178. *See supra* note 61.

179. Both California and Oregon enacted legislation banning the sale of newly manufactured vehicles containing mercury switches. In a move which may speak to the rivalry between Californians and Oregonians, the California Legislature enacted its ban

switches looks good in the morning paper, it does nothing to address the mercury already on the nation's roadways and in junkyards.

Maine's legislation requiring automobile manufacturers to pay for the removal and handling of mercury switches was a bold but proper step. Fortunately, New Jersey and Arkansas have followed in Maine's footsteps, but more state participation is needed. Manufacturers have urged that the recycling industry should shoulder the cost of removing mercury switches. However, it makes sense that the responsibility fall on the industry which had the most control to do something about it. Nevertheless, there is still plenty of opportunity for the automobile and recycling industries to work together.

There is a growing market for mercury-free automotive scrap.[180] EPA mercury emission regulations apply to the largest smelting facilities in the nation.[181] While these facilities only process approximately 10% of the automotive scrap in the nation, they are willing to pay a premium for mercury free materials in order to ensure compliance with emission caps.[182] This gives automobile recyclers a financial incentive to remove mercury switches. Nevertheless, some indications suggest that a high capture rate of mercury switches may only be achievable through legislation.[183]

Short of legislation, one thing states can do is continue their efforts to educate the recycling industry as to the proper methods of disposal. The Maine Department of Environmental Protection estimated that Maine is home to between 700 to 800 dismantling operations.[184] This suggests that the number of operations throughout the nation may be in the tens of thousands. Therefore, in the absence of legislation, it is important for states to do everything they can to increase awareness of the issue.

To put a dent into pollution from mercury switches, states must act together. Once mercury is emitted into the air during the smelting process, it becomes transient. For example, when mercury is released from a smelting facility in Pennsylvania, it may get deposited anywhere from New York to Maine to Canada. No matter how stringent legislation

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on the sale of new vehicles containing mercury switches two months after Oregon. However, perhaps in a show of one-upmanship, California set the date of compliance one year earlier, to January 1, 2005.

180. MINNESOTA OFFICE OF ENVIRONMENTAL ASSISTANCE, PRODUCT STEWARDSHIP OPPORTUNITIES WITHIN THE AUTOMOTIVE INDUSTRY 78 (2003), *available at* http://www.moea.state.mn.us/publications/autoPSreport.pdf.

181. NATURAL RESOURCES DEFENSE COUNCIL, *supra* note 38.

182. MINNESOTA OFFICE OF ENVIRONMENTAL ASSISTANCE, *supra* note 180, at 78.

183. *See supra* notes 93-94, 100 and accompanying text.

184. Alliance of Auto. Mfrs. v. Kirkpatrick, No. Civ. 02-149-B-W, 2003 WL 21684464, at *2 (D. Me. July 17, 2003).

is, unless there is uniformity among the states, pollution from automobile switches will remain as one of the highest sources of mercury pollution.

Given the current lack of uniformity among states in legislating the removal of mercury switches, it may be beneficial for the states with the most smelting facilities to take the lead by regulating the smelting of automotive scrap, as opposed to the removal of mercury switches. If an auto recycler is unable to send scrap metal to a smelting facility because it contains mercury switches, the recycler will take steps to ensure that the scrap is switch free.

This makes sense when one considers the geographic consolidation of the smelting industry. For example, Pennsylvania is home to more than 17% of the nation's smelting facilities.[185] Put together, five states are home to 50 percent of the nation's smelting facilities.[186] Any legislation enacted by these states would have a significant impact on mercury emissions. However, such legislation could be difficult to enforce, requiring state environmental protection officials to inspect incoming automotive scrap, often in the form of crushed cars and trucks.

V. Conclusion

Of the states that have mercury switch removal legislation or administrative programs, there is a lack of uniformity in regulating the removal of mercury switches from end-of-life vehicles. Most states have yet to address this issue. But even the states that have made a strong push for the removal of switches face the drawbacks of both cost and compliance issues. With the recent federal court ruling in Maine, states should see an opportunity to impose the costs of removing mercury switches onto vehicle manufacturers. Both the Model Mercury-Free Vehicle Act and Maine's mercury switch removal law require automakers to shoulder the burden of removing mercury switches and to annually report to state agencies their capture rates in order to monitor compliance. Taking note of the Alliance of Automobile Manufacturers' unsuccessful challenge to Maine's law, both New Jersey and Arkansas enacted similar legislation requiring vehicle manufacturers to shoulder the cost of implementing a mercury switch removal plan. Unfortunately, due to the long history of litigation between the states and automobile manufacturers, it is unlikely that the ruling to uphold Maine's law is the last judicial word on the subject.

The window of opportunity to make a substantial impact on mercury pollution control from automobile switches has opened, but yet it is slowly closing. States must act soon to address the hundreds of

185. *See* CLEAN CAR CAMPAIGN, *supra* note 32.
186. *Id.*

thousands of mercury switches still on the road today.