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Wendy Jastrensky

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Cracking Down on Coal: Pennsylvania Takes a Crack at Regulating Hazardous Mercury Emissions from Coal-Fired Power Plants with a State-Specific Rule that Is Stricter than the Federal Clean Air Mercury Rule

Wendy Jastremsky*

I. Introduction

More than twenty states petitioned to overturn the Environmental Protection Agency's ("EPA") Clean Air Mercury Rule ("CAMR") because it does little to protect the environment and puts young children and pregnant women in danger of continued exposure to mercury emitted from coal-fired power plants.¹ More than 600,000 U.S. women of childbearing age have dangerously high levels of mercury in their blood based on the recommended levels set by the EPA and the National Academy of Sciences.² High levels of mercury in the blood and breast milk of mothers can adversely affect the development of babies' brains

* Wendy Jastremsky is a 2008 graduate of the Dickinson School of Law of the Pennsylvania State University; B.A., *with distinction*, Pennsylvania State University 2004. The author would like to thank her parents, Carol and Buddy Jastremsky, and her brother, Jonathan Jastremsky for their constant motivation, encouragement and unconditional love. The author would especially like to thank her fiancé, Jessie A. Day, for his love, patience, support and selflessness during law school and the writing process. The author dedicates this comment to the memory of her grandmothers, Janet E. Spiece and Cecelia M. Jastremsky.

1. Press Release, Commw. of Pa., Dep't of Env'tl. Prot., Pa., coalition of states challenge federal mercury rule (June 19, 2006), *available at* <http://papress.state.pa.us/parelease/data/1060619.0011.htm>.

2. Special Campaigns, Protect Babies—Stop Toxic Mercury, http://www.pennfuture.org/campaigns_detail.aspx?CampaignID=34 (last visited Oct. 15, 2006).

and neurological systems.³

Pennsylvania is one of twenty-one states that responded to the federal CAMR by proposing state specific rules to reduce mercury.⁴ The regulations were published in the Pennsylvania Bulletin in February of 2007, but not without opposition. The Pennsylvania Senate initially voted to enact the federal CAMR in June 2006, and Senate opponents held back the publication of the state specific plan even after the regulations had been approved by the required authorities in November 2006.⁵ The Senate Environmental Resources and Energy Committee blocked publication of the regulations because it claimed that it was not given the appropriate time to review and potentially object to the regulations.⁶ Eventually, the Committee stopped fighting the state specific rule and ended its review period by approving the regulations.

Pennsylvania has a significant interest in eliminating mercury pollution while preserving the health and economy of the state.⁷ Pennsylvania is second only to Texas in the amount of mercury pollution emitted from coal-fired power plants in the United States.⁸ Pennsylvania's state specific Mercury Reduction Plan repairs the flaws in the federal rule by preserving market share for Pennsylvania-mined bituminous coal using advanced air pollution control technologies.⁹ This regulation also achieves at least a ninety percent reduction of mercury emissions from coal-fired power plants by 2015. Pennsylvania's regulated reduction is forty percent greater than the federal rule and is achieved in less time.¹⁰ The state regulation requires all facilities to meet an annual mercury emissions cap, and also prohibits mercury emissions trading that may create toxic "hot-spots" of contamination under the federal rule.¹¹

3. *See Id.*

4. *See* Press Release, Commw. of Pa., Dep't of Env'tl. Prot., Nearly half of states reject federal mercury rule (Apr. 26, 2006) *available at* <http://papress.state.pa.us/parelease/data/1060426.03.htm>.

5. Press Release, Commw. of Pa., *supra* note 1.

6. Marc Levy, *Tough Pa. Mercury Rule Block by Agency*, <http://www.forbes.com/feeds/ap/2007/01/08/ap3311519.html> (last visited Jan. 26, 2007).

7. *See* Press Release, Commw. of Pa., Dep't of Env'tl. Prot., Federal mercury rule will export jobs, energy dollars from Pa. (Apr. 17, 2006), *available at* <http://papress.state.pa.us/parelease/data/1060417.003.htm>.

8. *See* Press Release, Commw. of Pa., *supra* note 4.

9. *See* Press Release, Commw. of Pa., Dep't of Env'tl. Prot., EPA mercury reduction rule penalizes Pa. coal, threatens Pa. coal mining jobs (Apr. 19, 2006), *available at* <http://papress.state.pa.us/parelease/data/1060419.000.htm>.

10. *See* Press Release, Commw. of Pa., *supra* note 4.

11. *See* Press Release, Commw. of Pa., Dep't of Env'tl. Prot., DEP receives approval to move ahead with state-specific mercury control plan (May 17, 2006), *available at*

Pennsylvania's rule not only reduces more emissions faster than the federal rule, but it does so in a way that benefits the Commonwealth's health and economy.¹² The Pennsylvania Senate did the right thing by relinquishing their fight against the regulations and allowing the approved rule to be published because it is arguably more effective than the federal rule.¹³

This comment will focus on the shortcomings of the CAMR and why the Pennsylvania Mercury Reduction Plan is more effective in reducing mercury pollution as well as maintaining Pennsylvania's health and economy. Part II will give a background of mercury and discuss how mercury emissions adversely affect the environment and human beings. Part II will also provide the history of mercury regulation in the United States. Part III will analyze the shortcomings of the CAMR and how states and organizations are uniting to respond to it. This comment will conclude by analyzing the shortcomings of the federal rule when compared to Pennsylvania's specific rule.

II. Background

A. *What is Mercury?*

Mercury is a persistent, bio-accumulative neurotoxin that can cause brain, heart, nervous and immune system damage.¹⁴ It is especially dangerous to pregnant women and children.¹⁵ Mercury is found naturally in air, water and soil and exists in many forms including metallic mercury, inorganic mercury compounds and organic mercury compounds.¹⁶ Mercury is a natural element that cannot be produced or eliminated¹⁷ and can actively remain in the environment for 10,000 years.¹⁸

Human behavior has been, and continues to be, a major factor in the increased amount of mercury found in the environment. Mercury was introduced as a pollutant during industrialization when humans began to

<http://papress.state.pa.us/parelease/data/1060517.004.htm>.

12. See Press Release, Commw. of Pa., *supra* note 4.

13. See generally Press Release, Commw. of Pa., *supra* note 1.

14. See *id.*

15. See *id.*

16. See Frequent Questions About Mercury, <http://www.epa.gov/mercury/faq.htm#1> (last visited Oct. 15, 2006).

17. See Emily Figdor, PennEnvironment Res. & Pol'y. Ctr., Reel Danger: Power Plant Mercury Pollution and the Fish We Eat (2004), <http://www.pennfuture.org/protectbabies/ReelDangerReport.pdf>.

18. See Press Release, Commnw. of Pa., *supra* note 4.

unearth fossil fuels in order to use and burn them.¹⁹ Before industrialization, most of the Earth's mercury was trapped in coal and other fossil fuels.²⁰ Burning coal and using mercury during manufacturing are two prominent ways that humans increase mercury pollution in the environment.²¹ Mercury pollution that is emitted into the air from power plants falls to the earth and accumulates in soil and surface water. Mercury is then naturally converted to methylmercury after it accumulates in soil and surface water.²²

Methylmercury is the most dangerous form of mercury.²³ It can lead to severe neurological problems and even death from just a small amount entering the body.²⁴ Humans are most commonly affected by the methylmercury contained in fish.²⁵ Methylmercury is a highly toxic organic mercury compound that is made when bacteria consumes mercury and then combines it with carbon.²⁶ Microorganisms such as bacteria found in soil and surface water turn inorganic mercury compounds into methylmercury.²⁷ Fish and other marine life ingest these toxic microorganisms.²⁸ This consumption of bacteria causes methylmercury to move up the food chain.²⁹ Methylmercury stays present in an organism for an extended period of time.³⁰ So, larger predatory animals such as sharks, swordfish, mackerel, tilefish and albacore tuna have dangerously high levels of mercury because they retain all of the mercury contained in the bodies of their prey.³¹

B. *Mercury Pollution's Toll on the Environment*

Mercury contamination is also found in habitats other than bodies of

19. See Katherine Renshaw, *Sounding Alarms: Does Informational Regulation Help of Hinder Environmentalism?*, 14 N.Y.U. ENVTL. L.J. 654, 674 (2006).

20. See *id.*

21. See Frequent Questions About Mercury, *supra* note 16.

22. See Jeffery Kluger, *Mercury Rising*, TIME, Sept. 11, 2006, available at <http://www.time.com/time/magazine/article/0,9171,1531326,00.html>.

23. See Lauren Parry, *Clean Air Rules of 2004: Motivation, Impacts, and Concerns*, 25 J. LAND RES. & ENVTL. L. 367, 367 (2005).

24. See *id.*

25. See David W. Rugh, *Clearer, but Still Toxic Skies: A Comparison of the Clear Skies Act, Congressional Bills, and the Proposed Rule to Control Mercury Emissions From Coal-Fired Power Plants*, 28 VT. L. REV. 201, 208 (2003).

26. See Frequent Questions About Mercury, *supra* note 16.

27. See *id.*

28. See *id.*

29. See *id.*

30. See Kluger, *supra* note 22.

31. See *id.*

water and spreads farther than previously thought.³² While fish are the largest source of human mercury contamination, they are not the only organisms affected. Land animals are also being contaminated by mercury.³³ High levels of mercury were recently found in polar bears, bats, mink, otters, panthers and other land animals.³⁴ It comes as no surprise that birds that eat fish, like the common loon, have high levels of mercury in their blood.³⁵ Recent studies show however, that birds that do not consume fish also have increased levels of mercury in their blood.³⁶ Mercury emissions do not only fall into lakes and streams but also onto land where the mercury is absorbed by dead leaves and soil and then consumed by worms and insects.³⁷ All types of birds eat these contaminated worms and insects.³⁸ Mercury contamination is affecting the reproductive cycles of these songbirds thereby causing a decline in their population.³⁹ With a reduced number of birds to consume potentially harmful insects, forests and woodlands will be more prone to damage caused by these insects.⁴⁰

C. *Mercury Pollution's Toll on Humans*

If mercury pollution is not effectively regulated, consumers will have to bear the burden of protecting themselves by monitoring their own fish consumption.⁴¹ States assist this self-regulation of fish consumption by issuing advisories detailing what bodies of water contain dangerously contaminated fish.⁴² Forty-five states have fish consumption advisories that cover thirty-five percent of the nation's

32. See Anthony DePalma, *Study of Songbirds Finds High Levels of Mercury*, N.Y. TIMES, Jul. 25, 2006, available at <http://www.nytimes.com/2006/07/25/nyregion/25birds.html?ex=131148000&en=51ac447de239d1b6&ei=5090&partner=rssuserland&emc=rss>.

33. See Linda A. Malone, *What do Snowmobiles, Mercury Emissions, Greenhouse Gases and Runoff Have in Common? : The Controversy over "Junk Science,"* 9 CHAP. L. REV. 365, 374 (2006). A 2005 study showed increased levels of mercury in New England wildlife. *Id.*

34. See Kluger, *supra* note 22.

35. See DePalma, *supra* note 32.

36. See *id.*

37. See *id.*

38. See *id.*

39. See *id.*

40. See DePalma, *supra* note 32.

41. See Abigail Okrent, *Native Americans Confront Mercury Threat to Health, Culture*, 6 SUSTAINABLE DEV. L. & POL'Y 62 (2006).

42. See Fish Advisories, What You Need to Know About Mercury in Fish and Shellfish, <http://www.epa.gov/waterscience/fishadvice/advice.html> (last visited Nov. 11, 2006).

lakes and twenty-four percent of the nation's river miles.⁴³ Since 2001, Pennsylvania has continued to issue a statewide health advisory regarding the consumption of recreationally caught sport fish. The Commonwealth advises Pennsylvanians to eat no more than one meal (one-half pound) per week of fish caught in the state due to the probability of mercury contamination.⁴⁴ In 2004, the EPA and the Food and Drug Administration ("FDA") issued a warning stating that young children and women of childbearing age should not consume more than six to twelve ounces of canned tuna per week due to the probability of mercury contamination.⁴⁵

Although these advisories are in place, most people are unaware of them and the risks associated with eating certain types of fish.⁴⁶ The FDA has failed to issue guidelines regarding the manner in which consumers should be notified of these advisories.⁴⁷ Many of the nation's largest grocery retailers like Safeway, Star Market, Vons, Acme, Carrs and Albertson's now post warning signs at their fish counters, but still only sixteen percent of Pennsylvania grocers are posting warnings.⁴⁸ Of the ninety-seven Pennsylvania stores that do post warning signs, ninety-five are located in the eastern half of the state. This leaves a large population of Pennsylvanians unaware of the risks associated with the fish that they purchase and consume.⁴⁹

Humans are affected in some way by each form of contamination. While babies and young children have the highest risk of developing health problems due to mercury contamination, people of all ages and cultures are at risk. Mercury pollution is found to cause illnesses such as lung disease and heart disease.⁵⁰ Native American groups are disproportionately affected by mercury contamination because they consume ten times more fish than the average American.⁵¹ The impact of contamination on Native American tribes is not only health related, but it is also cultural.⁵² Fishing is a social and cultural tie between tribe

43. *See id.*

44. *See* Commonwealth of Pennsylvania Public Health Advisory—2006 Fish Consumption, <http://www.depweb.state.pa.us/watersupply/cwp/view.asp?a=1261&q=453946> (last visited Nov. 11, 2006).

45. *See* Malone, *supra* note 33 at 375. *See also* Melanie Warner, *With Sales Plummeting, Tuna Strikes Back*, N.Y. TIMES, Aug. 19, 2005, at C3.

46. Don Hopey, *Eating Fish Safely is the Sign of the Times—At Some Markets*, PITTS. POST-GAZ., Dec. 20, 2006, at F-1.

47. *See id.*

48. *Id.*

49. *See id.*

50. *See* Malone, *supra* note 33, at 375.

51. *See* Okrent, *supra* note 41, at 62.

52. *See id.*

members, and heeding fish consumption advisories could lead to the end of centuries old traditions that would drastically affect Native American culture.⁵³

Babies and young children are most severely affected by mercury contamination.⁵⁴ Approximately 630,000 infants born each year have blood-mercury levels above the EPA's safe level.⁵⁵ The separation between an infant's blood and their brain is not fully developed until after the first year of life.⁵⁶ This makes a developing child's brain dangerously vulnerable to exposure from mercury in the mother's blood.⁵⁷ Research indicates that blood-mercury levels of fetuses are commonly 1.7 times the blood-mercury levels of the mother.⁵⁸ This occurs because fetal blood is made up predominantly of hemoglobin, which is the part of the blood that mercury binds to.⁵⁹ So, while the mercury levels in a mother's blood may not affect her, it poses a dangerous threat to her unborn child.⁶⁰ Recent studies suggest that the affects of mercury exposure on unborn fetuses may be permanent.⁶¹ High levels of mercury in the breast milk of mothers can also affect the development of babies' brains and neurological systems.⁶² Mercury pollution from coal-fired power plants in the United States is expected to reduce the IQs of between 300,000 and 600,000 children a year, resulting in an \$8.7 billion loss in earnings annually.⁶³

D. Mercury Emissions from Coal-burning Power Plants are the Main Source of Mercury Pollution in the United States

Emissions from coal-burning plants are the main source of mercury pollution in the United States.⁶⁴ These emissions account for more than 90,000 pounds of airborne mercury a year, making up a third of the country's mercury output.⁶⁵

Pennsylvania is the second-highest ranked state for the amount of

53. *See id.*

54. Special Campaigns, Protect Babies—Stop Toxic Mercury, *supra* note 2.

55. *See* Rachel Kalman, *EPA's Mercury's Cap and Trade Rule: An Environmental Injustice for Women*, 13 CARDOZO J.L. & GENDER 111, 112 (2006).

56. *See id.* at 119.

57. *See id.*

58. *See id.* at 120.

59. *See id.*

60. *See id.*

61. *See id.* at 119.

62. *See* DePalma, *supra* note 32.

63. *See* Malone, *supra* note 33, at 375.

64. *See* Renshaw, *supra* note 19.

65. *See* Malone, *supra* note 33, at 375.

mercury pollution emitted from coal-fired power plants in the United States.⁶⁶ Pennsylvania's thirty-six coal-fired power plants have seventy-eight electric generating units that represent 20,000 megawatts of power. These plants make up approximately three-fourths of the more than five tons of mercury emitted into the air from all contamination sources in the Commonwealth.⁶⁷ When coal is burned, mercury enters the atmosphere and precipitates with rain or snow accumulating in bodies of water and soil.⁶⁸ Unlike most pollutants, mercury does not widely disperse once it becomes part of the atmosphere, but rather, precipitates in the vicinity from which it was emitted.⁶⁹ This process creates "hot-spots" of contamination surrounding coal-fired power plants.⁷⁰ Hot-spots are places where human health and local ecosystems are in danger because of the high levels of mercury that are built up in local fish and wildlife.⁷¹ Some areas of the country are more likely to be contaminated by mercury than others. Wet and vegetated areas are more susceptible to contamination than dry and grassy areas because vegetation, water and wildlife give mercury a greater chance to accumulate and pose problems to the health of humans and ecosystems.⁷² Therefore, the wet and vegetated environment of the northeast is a prime setting for mercury pollution.⁷³

While the existence of hot-spots seems evident, their existence is hotly contested.⁷⁴ Mercury levels around coal-fired power plants are forty-seven percent higher than areas further away from the plants.⁷⁵ This is strong evidence that mercury concentrates around its emission source.⁷⁶ Researchers identified at least five hot-spots in the northeastern United States and southeastern Canada, and suspect an additional nine

66. See Press Release, Commw. of Pa., *supra* note 4.

67. See *id.*

68. See Parry, *supra* note 23, at 674.

69. See Press Release, Commw. of Pa., Dep't of Env'tl. Prot., EPA Mercury Reduction Proposal Penalizes Pennsylvania Coal (June 30, 2004), *available at* <http://papress.state.pa.us/parelease/data/1040701.006.htm>.

70. See *id.*

71. See Juliet Eilperin, *Mercury 'Hot Spots' Identified in U.S. and Canada*, WASH. POST, Jan. 6, 2007, at A07.

72. See *id.*

73. See *id.*

74. See Daniel Cusick, *MERCURY: Persistent 'hotspots' raise questions about cap-and-trade programs, scientist says*, 10 ENV'T & ENERGY PUB. LLC 9 (2007).

75. See *Pennsylvania Documents Mercury 'Hot Spots' Near Power Plants*, 17 REAL ESTATE/ ENVTL. LIABILITY NEWS 17 (2006). From an ongoing study by Pennsylvania State University for the Pa. Department of Environmental Protection. *Id.*

76. See *id.*

hot-spots within the same vicinity.⁷⁷ The Upper Connecticut River in New Hampshire and Vermont, parts of the Merrimack River in Massachusetts and New Hampshire, the Upper Androscoggin River in Maine and New Hampshire, and the Upper Kennebec River in Maine have all been found to be hot-spots of mercury contamination.⁷⁸ While these studies seem to indicate that hot-spots do exist in the northeast, representatives of coal-fired electric utilities argue that the methods and findings of these studies are incorrect and that hot-spots do not exist.⁷⁹

The three types of coal mined in the United States are bituminous coal, sub-bituminous coal and lignite coal.⁸⁰ Federal emissions standards are more stringent for bituminous coal found in Pennsylvania and other eastern states than they are for sub-bituminous coal mined in the west.⁸¹ Although bituminous coal contains more mercury than sub-bituminous coal, bituminous coal also contains more chlorine, which enhances the removal efficiency of mercury control technology.⁸² Therefore, “controlled bituminous coal is ‘cleaner’ with respect to mercury emissions than uncontrolled sub-bituminous coal.”⁸³

77. See Cusick, *supra* note 74, at 9.

The research was sponsored by the Maine-based non-profit group, BioDiversity Research Institute and conducted by eleven scientists who work at institutions throughout the northeast. The study was published in the January 2007 edition of the *Bioscience* journal. Studies were conducted on the mercury levels in yellow perch and common loons in order to identify the areas considered to be “hot-spots.” EPA considers any mercury concentrations of more than 0.3 parts per million (ppm) found in perch to be unsafe. According to the researchers, in some of the areas the concentrations of mercury in perch were as high as five ppm. Mercury levels in perch were highest in the western Adirondacks of New York and parts of the Merrimack River watershed in New Hampshire. The EPA also deems blood-level mercury concentrations above 3.0 ppm in loons pose developmental problems to the birds. In some areas of Canada ninety percent of the sampled loon population had mercury levels higher than 3.0 ppm. Mercury concentrations of more than fourteen ppm were found in loon blood samples taken from the Upper Kennebec River in Maine.

Id.

78. See *id.*

79. See *id.*

80. See Press Release, Commw. of Pa., *supra* note 11.

81. See Press Release, Commw. of Pa., Dep’t of Env’tl. Prot., Unlike federal rule, State mercury rule constitutionally sound, Pa.’s state-specific rule sets same performance test for all coal types (May 30, 2006), available at <http://papress.state.pa.us/parelease/data/1060530.000.htm>.

82. See Press Release, Commw. of Pa., *supra* note 9.

83. *Id.*

E. *From the Clean Air Act to the Clean Air Mercury Rule: The History of Federal Regulation on Air Quality Standards*

Congress first responded to concerns regarding pollution from coal-fired power plants in 1970 with the Clean Air Act.⁸⁴ The Clean Air Act was intended, “to force plant owners to internalize some of the external costs of coal combustion by requiring new plants to install pollution controls to limit their emissions.”⁸⁵

Sulfur dioxide emissions from coal-fired power plants were the first specific concern of the EPA that warranted regulation beyond the Clean Air Act.⁸⁶ This concern was addressed by the EPA’s creation of the Acid Rain Program, which was added to the Clean Air Act with 1990 amendments.⁸⁷ The Acid Rain Program imposed regulations on coal-fired power plants by requiring plant owners and operators to gradually reduce emissions through a trade program that permitted plants to buy and sell the rights to emit sulfur dioxide.⁸⁸

American law has attempted to limit the pollution emitted from coal-fired power plants not only through the Clean Air Act, but also indirectly by insulating alternative power sources from the need to “price compete” with coal-fired power.⁸⁹ Motivated by increased concerns to protect human health, the EPA enacted The Clean Air Rules of 2004.⁹⁰ These rules consist of six regulations:⁹¹ 1) The Clean Air Ozone Rules,⁹² 2) The Clean Air Fine Particles Rules, 3) The Clean Air Interstate Rule,⁹³ 4) The Clean Air Mercury Rule,⁹⁴ 5) The Clean Air Nonroad Diesel Rule⁹⁵ and 6) The Fine Particle Rules.⁹⁶ These rules recognized the improvement of air quality due to the Clean Air Act, but they also represented a need to reduce pollution even more in order to promote public health.⁹⁷

Prior to the CAMR, the FDA and the EPA had the responsibility of

84. See David B. Spence, *Coal-Fired Power in a Restructured Electricity Market*, 15 DUKE ENV. L. & POL’Y F. 187, (2005); 42 U.S.C. §§ 7401-7515 (1970).

85. *Id.* at 189.

86. *See id.* at 190.

87. *See id.*; 42 U.S.C. §§ 401-416 (2000).

88. *See* Spence, *supra* note 84 at 190.

89. *See id.* at 192.

90. *See* Parry, *supra* note 23, at 367.

91. *See id.*

92. 40 C.F.R. §§ 51, 52, 80 (2005).

93. 40 C.F.R. §§ 51, 72, 73, 74, 77, 78, 96 (2005).

94. 40 C.F.R. §§ 60, 63, 72, 75 (2005).

95. 40 C.F.R. § 80 (2006).

96. 40 C.F.R. §§ 51, 52 (2006).

97. *See* Parry, *supra* note 23, at 367.

warning consumers about the risks associated with the consumption of contaminated seafood.⁹⁸ A panel on the National Academy of Sciences determined in 2000, that high levels of mercury pollution continued to exist under the Clean Air Act regulations and were posing an unacceptable health risk to women and children.⁹⁹ Despite the progress of the Clean Air Act, pollution from coal-fired power plants continued to cause harm due to three problems with the Clean Air regulations: “[1] exemptions for old coal-fired power plants, [2] interstate transport of pollutants, and [3] EPA’s failure to regulate certain important pollutants in coal combustion emissions.”¹⁰⁰ The Clean Air Act only applied to new plants, allowing older, unregulated plants to continue to pollute as they always had.¹⁰¹ In 1998 the EPA reported that the regulation of coal-fired power plants was “appropriate and necessary.”¹⁰² That same year, the EPA proposed to treat and regulate mercury emissions from coal-fired power plants as toxic pollutants, in which case mercury emissions would be regulated under the Act’s most strict “technology-based standard.”¹⁰³

The EPA’s recognition of the toxic dangers of mercury pollution in the late 1990s was largely ignored during the creation of the CAMR.¹⁰⁴ The EPA considered two options in order to regulate mercury emissions. The first option would require mercury sources to set up maximum achievable control technology (“MACT”).¹⁰⁵ The second option was a market-based cap and trade program¹⁰⁶ that focused on providing plants with flexibility while attempting to reduce pollution.¹⁰⁷ During this time of consideration, the EPA reversed its 2000 decision that held it was appropriate and essential for the EPA to regulate coal-fired power plants.¹⁰⁸ This reversal allowed the EPA to ignore MACT and utilize the market based program.¹⁰⁹

The market based CAMR was modeled after the Acid Rain Program and would attempt to reduce mercury emissions through a cap and trade

98. Renshaw, *supra* note 19, at 678.

99. *Id.* at 677.

100. Spence, *supra* note 84, at 194.

101. *See id.*

102. *See id.* at 208.

103. *See id.*

104. *See generally* Renshaw, *supra* note 19, at 679.

105. *See id.* at 678-79.

106. *See id.*

107. *See* Parry, *supra* note 23, at 382.

108. *See* Renshaw, *supra* note 19, at 679.

109. *See id.*

program.¹¹⁰ Under the cap and trade program, each plant is allotted a certain number of pollution credits, also known as allowances, which represent a specific amount of mercury that can be emitted from each plant.¹¹¹ The credits can be traded with any plant in any state participating in the program.¹¹² The total amount of credits allotted to all plants represents the cap that the EPA imposed on mercury emissions.¹¹³ The EPA set the cap at 38 tons per year by 2010, and fifteen tons per year by 2018.¹¹⁴ So, although some plants are polluting more than others based on the credits traded, mercury pollution nationwide will not exceed the EPA's cap.¹¹⁵

III. Analysis

A. *The Problems With and Criticisms of the Federal Mercury Rule*

Criticisms of the CAMR began with the reversal of the 2000 decision that allowed the EPA to ignore the MACT alternative.¹¹⁶ Opponents of the CAMR allege that not only does it have the potential to increase mercury emissions in certain areas, but also that the CAMR is actually illegal under the Clean Air Act.¹¹⁷ The Clean Air Act requires that pollutants that are found to be hazardous must be regulated under MACT standards.¹¹⁸ Mercury was once found to be a hazardous pollutant, and the composition of mercury has not changed since that advent in a way that would disqualify it from being considered a hazardous pollutant.¹¹⁹ Therefore, CAMR opponents argue that its regulation under the cap and trade program instead of the MACT standards is a violation of the Clean Air Act.¹²⁰

The plan to regulate mercury using a cap and trade program would compromise the integrity of trading.¹²¹ It will allow some plants to continue polluting at current levels resulting in some parts of the country,

110. *See id.*

111. *See Kalman, supra* note 55, at 119.

112. *See id.*

113. *See id.*

114. 40 C.F.R. § 60.4142 (2005).

115. *See Kalman, supra* note 55.

116. *See Renshaw, supra* note 19, at 679.

117. *See Malone, supra* note 33, at 376.

118. 42 U.S.C. § 7429 (2000).

119. *See generally Renshaw, supra* note 19, at 679.

120. *See Malone, supra* note 33, at 376.

121. *See Press Release, Commw. of Pa., Dep't of Env'tl. Prot., DEP Challenges EPA's Plan to Regulate Mercury (June 28, 2004), available at* <http://papress.state.ps.us/parelease/data/1040701.0010.htm>.

including Pennsylvania, ending up with more mercury pollution than others.¹²² So while the EPA created the CAMR in order to eliminate mercury pollution, the rule arguably increased mercury pollution in the parts of the country that needed the reduction the most.¹²³

Whether recent scientific evidence of hot-spots should be considered in order to revise the CAMR is hotly contested among officials.¹²⁴ Scientific research that suggests that mercury pollution results in hot-spots of contamination is a potential threat to the CAMR's cap and trade system.¹²⁵ Some officials argue that the evidence should be considered before the cap and trade system goes into effect in 2010, while others, including the EPA, remain dedicated to the CAMR.¹²⁶ Representatives of coal-fired electric utilities argue that mercury emissions do not cause hot-spots.¹²⁷ Rather, they argue that the cap and trade system actually helps to eliminate hot-spots because of the financial incentive that the largest emitters have to reduce mercury emissions in order to sell their credits to other utilities.¹²⁸

Representatives of the medical field are taking notice of the poor attempts to regulate mercury emissions and are starting to speak out about the need to regulate the pollutant effectively.¹²⁹ The American Medical Association ("AMA") has labeled itself a strong opponent of the CAMR by making a statement that the rule "is inconsistent with the AMA's health-protective approach to air pollution."¹³⁰ The AMA has decided to toughen its mercury policies and has called on the federal government to take a stronger legislative stance on mercury emissions because of the health effects that mercury has on young women and children. The AMA claims that the cap and trade system of the CAMR is ineffective because it gives utilities the opportunity to dodge the responsibility to reduce mercury emissions.¹³¹ The American Academy of Pediatrics ("AAP"), American Nurses Association ("ANA"), American Public Health Association ("APHA") and Physicians for

122. *See id.*

123. *See* Renshaw, *supra* note 19, at 680.

124. *See* Eilperin, *supra* note 71 at A07. The evidence mentioned includes scientific evidence by BioDiversity Research Institute and was conducted by eleven scientists who work at institutions throughout the northeast. *Id.*

125. *See id.*

126. *See id.*

127. *See* Cusick, *supra* note 74, at 9.

128. *See id.*

129. *See Mercury: AMA Opposes Bush Administration's Cap-and-Trade Rule*, 10 ENV'T & ENERGY PUB, LLC (GREENWIRE) 9 (2007).

130. *See id.* "The American Medical Association is the nation's largest association for medical professionals." *Id.*

131. *See id.*

Social Responsibility ("PSR") are also challenging the CAMR by saying that Americans are exposed to unsafe levels of methylmercury from environmental sources.¹³² The EPA and representatives of coal-fired electric utilities continue to tout the benefits of the CAMR in the face of criticism from the medical community.¹³³

Representatives of coal-fired electric utilities continue to be opposed to Pennsylvania's Mercury Reduction Plan.¹³⁴ They argue that the technology needed to impose the MACT standards is too expensive and not available, so the cap and trade program is the most available and economically efficient method to reduce mercury emissions.¹³⁵ These representatives of electric utilities are concerned that the costs associated with mercury-technology upgrades will be too costly and force some plants to close.¹³⁶ However, the Pennsylvania Department of Environmental Protection ("DEP") has been able to prove these concerns unfounded by providing evidence that the implementation of mercury-control technology is less expensive than buying emission allowances under the CAMR.¹³⁷ Electric utility representatives also argue that the cap and trade program worked for the Acid Rain Program and therefore will also work to diminish mercury pollution.¹³⁸ Those representatives might change their minds about the Acid Rain Program if they knew that a U.S. Department of Energy's National Energy Technology Laboratory expert concluded that the technology needed to control mercury emissions is fifty times cheaper than equipment needed to meet federal acid rain requirements.¹³⁹

Environmental organizations and other entities are seeking to have mercury emissions regulated under the strict Total Maximum Daily Load ("TMDL") program of the Clean Water Act¹⁴⁰ because of the impact the

132. See *Court Report*, MEDICAL DEVICE WEEK, (Jan. 17, 2007).

133. See *Mercury: AMA Opposes Bush Administration's Cap-and-Trade Rule*, *supra* note 129, at 9.

134. See Malone, *supra* note 33, at 377.

135. See *id.*

136. See Press Release, Commw. of Pa, Dep't of Env'tl. Prot., Mercury control technology readily available, affordable (Sept. 12, 2006), available at <http://papress.state.pa.us/parelease/data/1060912.007.htm>.

137. See *id.*

138. See Malone, *supra* note 33, at 377.

139. See Press Release, Commw. of Pa., *supra* note 136.

140. See Understanding the Clean Water Act, <http://www.cleanwateract.org/pages/cl.cfm> (last visited Jan. 3, 2007). A Total Maximum Daily Load is a pollution cap or ceiling for a particular body of water. It includes a clean up plan that outlines how to attain that cap. The TMDL must specify problems, determine the pollution reductions necessary to solve the problems, identify the sources of pollution and assign responsibilities for needed action. 13 U.S.C. § 1313(d) (2000).

emissions have on water systems.¹⁴¹ At present, the Clean Air Act and the Clean Water Act are two separate pieces of legislation that are not interconnected in any way.¹⁴² The similarities of the two acts are being highlighted by environmental groups because mercury emitted into the air has adverse effects on water quality as well as air quality.¹⁴³ A direct connection between mercury pollution and coal-fired power plants indicates that these emissions should be regulated as a “point-source”¹⁴⁴ discharge under the Clean Water Act.¹⁴⁵ However, it is unclear if the Clean Water Act applies to pollution that is first discharged into the air before entering the water.¹⁴⁶

The Bush Administration continues to block efforts by a North American Free Trade Agreement (“NAFTA”) Panel to investigate the impact that the controversial Clean Air Act is having on water.¹⁴⁷ The administration’s efforts to block the investigation are preventing states and environmental groups from challenging the CAMR based on water claims.¹⁴⁸ Such an investigation would point out, internationally, the

141. See *Blocked NAFTA Panel Inquiry on EPA Mercury Rule Stymies Water Suits*, 28 *INSIDE EPA* 1 (2007).

142. See *id.*

143. See *id.*

144. 33 U.S.C. § 1362 (2000). The Clean Water Act defines “point source” as, any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

Id.

145. See *Blocked NAFTA Panel Inquiry on EPA Mercury Rule Stymies Water Suits*, *supra* note 141, at 1.

146. See *id.*

147. See *id.*

The Commission for Environmental Cooperation (“CEC”) was formed by NAFTA in order to monitor NAFTA countries’ compliance with their own environmental laws, but it cannot enforce compliance. The commission is made up of the EPA administrator and the environment ministers of Mexico and Canada.

See *id.*

148. See *id.*

U.S. officials need only one supporting vote or one abstention from either Mexico or Canada to block the inquiry. To gain the needed support, U.S. officials will likely look to the panel’s Mexican representative because Mexico is facing a similar inquiry into its enforcement of water pollution laws. The two nations may agree to vote against both proposals. If the panel does refuse to take up the inquiry, the decision would be the first time the commission has denied such a petition from a citizen’s group.

See *id.*

failure of the United States to comply with its own law.¹⁴⁹ The investigation would provide results as to how the CAMR impacts water quality and would make a good foundation for the case that mercury emissions in the air should be monitored in the same manner as mercury directly discharged into water.¹⁵⁰ This would mean that mercury emissions from coal-fired power plants would be regulated under both the Clean Air Act and the Clean Water Act.¹⁵¹

B. States Unite with Environmental and Medical Organizations to Respond to the Flawed Clean Air Mercury Rule

In response to the flaws in the federal regulations, more than twenty states petitioned the EPA's Clean Air Mercury Rule alleging that the rule violates the Clean Air Act.¹⁵² A number of Native American tribes also became actively involved and are parties to these legal challenges.¹⁵³ The various lawsuits against the EPA were consolidated in December of 2005 into *New Jersey v. EPA*.¹⁵⁴ The American Academy of Pediatrics ("AAP"), American Nurses Association ("ANA"), American Public Health Association ("APHA") and Physicians for Social Responsibility ("PSR") were victorious in their lawsuit against EPA when the Washington D.C. Circuit Court vacated the CAMR's new source performance standards and remanded to the EPA for reconsideration under the Clean Air Act.¹⁵⁵

States are also responding by proposing their own rules that would reduce more mercury pollution faster.¹⁵⁶ The state-specific rules of a majority of the twenty-one states that have them reject the emissions trading allowed by the federal rule. Some states are eliminating trading programs altogether, even trading within state borders.¹⁵⁷

The idea for a state specific mercury rule in Pennsylvania came in August 2004 when Citizens for Pennsylvania's Future ("PennFuture")¹⁵⁸

149. *See id.*

150. *See id.*

151. *See id.*

152. Press Release, Commw. of Pa., *supra* note 1.

153. Okrent, *supra* note 41, at 62.

154. *State of New Jersey, et al. v. Environmental Protection Agency*, No. 05-1097, 2005 U.S. App. Lexis 26926 (D.C. Cir. Dec. 8, 2005).

155. *New Jersey, et al. v. EPA*, 2008 U.S. App. LEXIS 2797 (D.C. Cir. Feb. 8, 2008).

156. Press Release, Commw. of Pa., *supra* note 4.

157. *States Move to Finalize Strict Mercury Rules as EPA Deadline Looms*, CLEAN AIR REP. 20 (2006).

158. Press Release, PennFuture, PennFuture Praises Legislature for Ending Session, Leaving Clean Cars Program and Toxic Mercury Pollution Rules Intact; Unprecedented Public Outpouring of Support Transforms Pennsylvania from Rust Belt State to Clean

filed a petition with the Pennsylvania Environmental Quality Board ("EQB") asking the EQB to enact legislation that would require coal-fired power plants to reduce mercury emissions by 90 percent.¹⁵⁹ The petition was filed on behalf of ten environmental, public health, sporting, conservation and women's rights organizations. Since the petition was filed, over 100 organizations have joined the effort to reduce mercury emissions.¹⁶⁰ Pennsylvanians also support the rule as evidenced by the record number of public responses to the proposed rule during the public comment process.¹⁶¹

C. The Federal Clean Air Mercury Rule Adversely Effects Pennsylvania's Health and Economy

The federal mercury rule will cost Pennsylvanians jobs and will export energy investments to other states.¹⁶² Under the federal plan, utilities can buy their way out of cleaning up mercury pollution at Pennsylvania power plants.¹⁶³ Utilities do not have to make emission reductions, but rather, can purchase these reductions from upgraded facilities in other states instead of investing to clean up their own plants in Pennsylvania.¹⁶⁴ Mercury does not widely disperse once it becomes a part of the atmosphere, but precipitates in the vicinity from which it was emitted. As a result, if plants are left unregulated, Pennsylvania has the potential to turn into one large hot spot of contamination.¹⁶⁵ Therefore, there are no guarantees that Pennsylvania will see any significant reduction in mercury emissions.¹⁶⁶

Federal emissions standards are more stringent for bituminous coal found in Pennsylvania and other eastern states than they are for sub-bituminous coal mined in the west.¹⁶⁷ This creates an unfair marketplace that puts Pennsylvania at a competitive disadvantage.¹⁶⁸ Because of these disparities, owners of coal-fired power plants that burn

Belt State (Nov. 22, 2006), available at http://www.pennfuture.org/media_pr_detail.aspx?MediaID=705&TypeID=2&Archive=. "PennFuture is a public interest organization that advances policies that improve the state's environment and economy."

Id.

159. *Id.*

160. *Id.*

161. *Id.*

162. Press Release, Commw. of Pa., *supra* note 7.

163. *See id.*

164. *See id.*

165. *See* Press Release, Commw. of Pa., *supra* note 69.

166. *See* Press Release, Commw. of Pa., *supra* note 7.

167. *See* Press Release, Commw. of Pa., *supra* note 81.

168. *See id.*

Pennsylvania bituminous coal could comply with federal regulation by merely switching to sub-bituminous coal that is mined in the west.¹⁶⁹

D. Pennsylvania's Proposed Mercury Reduction Plan is Better for Pennsylvania's Health and Economy than the Federal Rule

The federal mercury rule uses a market-based cap and trade program that will do little to curb pollution blowing into Pennsylvania from states upwind.¹⁷⁰ The DEP has advocated that mercury be regulated through the MACT requirements¹⁷¹ that the EPA rejected.¹⁷² The MACT requirements achieve much greater and timelier reductions in mercury emissions.¹⁷³

The Pennsylvania DEP formally rejected the federal cap and trade program when it submitted its own mercury rule to the EPA in November, 2006.¹⁷⁴ The Pennsylvania Mercury Reduction Plan bans participation in the cap and trade program and establishes mercury emission standards and annual emission limitations as part of the statewide nontradable mercury allowance program that will reduce emissions by 90 percent before 2015.¹⁷⁵

Pennsylvania's state-specific regulation will reduce emissions while benefiting Pennsylvania's coal industry by preserving the market for bituminous coal mined in Pennsylvania. It presumes compliance for coal-fired power plants that use advanced air control technologies to burn "clean" bituminous coal.¹⁷⁶ This will alleviate the need for Pennsylvania power plants to switch to sub-bituminous coal mined in the west.¹⁷⁷

The enactment of Pennsylvania's Mercury Reduction Plan was a political tug-of-war between the Governor's Administration and Pennsylvania Senators. The Pennsylvania Mercury Reduction Plan

169. See Press Release, Commw. of Pa., *supra* note 9.

170. Press Release, Commw. of Pa., Dep't of Env'tl. Prot., DEP to challenge EPA's mercury reduction rule (Mar. 15, 2005), *available at* <http://papress.state.pa.us/parelease/data/1050316.000.htm>.

171. *Id.*

172. See Renshaw, *supra* note 19, at 679.

173. See Press Release, Commw. of Pa., Dep't of Env'tl. Prot., DEP secretary testifies before U.S. senate panel examining final mercury reduction rule (Apr. 19, 2005), *available at* <http://papress.state.pa.us/parelease/data/1050419.003.htm>.

174. See DEPT. OF ENV'T PROTECTION, State Plan for the Control of Mercury Emissions from Existing Coal-Fired Electric Steam Generating Units (2006), *available at* http://www.dep.state.pa.us/dep/DEPUTATE/AIRWASTE/AQ/regs/docs/State_Plan_for_EGU_110606.pdf.

175. See *id.*

176. See Press Release, Commw. of Pa., *supra* note 9.

177. See *id.*

became a final administrative action in November of 2006 after it was approved by the Independent Regulatory Review Commission ("IRRC"), the Attorney General and the EQB following a 17-3 endorsement. Publishing the rule was the last step necessary in order to make the rule official.¹⁷⁸ However, the Legislative Reference Bureau¹⁷⁹ refused to publish the rule in the Pennsylvania Bulletin for months,¹⁸⁰ siding with Pennsylvania Senators who opposed the rule.

The Senate Environmental Resources and Energy Committee ("Senate Committee") opposed the state-specific rule because it bans the interstate trade of mercury credits between plant owners.¹⁸¹ The Senate voted to enact the federal CAMR (which allows the interstate trade of mercury credits) in June of 2006, but the bill died in the House.¹⁸² The Senate committee blocked the publication of the regulations because it maintained that the Legislative Reference Bureau was not authorized to publish the mercury rule, due to the fact that the Senate Committee still had time to review, and possibly object to the rule.¹⁸³ Governor Rendell's administration maintained that the Legislative Reference Bureau overstepped its boundaries with its refusal because the Senate review period expired on Nov. 30, 2006 with the end of the prior two-year General Assembly term.¹⁸⁴ The Legislative Reference Bureau defended its refusal and argued that the Senate adjourned on Nov. 28, 2006, before the Senate Committee's fourteen day review period had ended. Citing state regulatory law, the Bureau maintained that the Senate Committee was permitted ten additional days to review during the new term.¹⁸⁵ The state-specific rule was published in the Pennsylvania Bulletin on February 17, 2007,¹⁸⁶ after the Senate Committee finally

178. John O'Brian, *AG Will be Spectator in Pa. Controversy*, <http://www.legalnewsline.com/news/188926-ag-will-be-spectator-in-pa.-controversy> (last visited Jan. 26, 2007). Publication in the Pennsylvania Bulletin makes an administrative rule official. *Id.*

179. Mark Levy, *Pa.'s Tough Rule on Mercury in a Bureaucratic Tug-of-War*, http://www.philly.com/mld/inquirer/news/local/states/pennsylvania/counties/philadelphia_county/philadelphia/16414176.htm (last visited Jan. 26, 2007). The Legislative Reference Bureau is the state agency that is responsible for publishing state administrative actions. *Id.*

180. O'Brian, *supra* note 178.

181. David DeKok, *Foes of state mercury-emission rules back off*, THE PATRIOT NEWS, Feb. 9, 2007, at C04.

182. Levy, *supra* note 179.

183. *Id.*

184. *Id.*

185. *Id.*

186. Press Release, Commw. of Pa., Dep't of Env'tl. Prot., State-Specific Plan to Control Toxic Mercury Emissions Takes Effect (Apr. 26, 2007), *available at* <http://www.depweb.state.pa.us/news/cwp/view.asp?a=1278&q=518829>.

ended their review and accepted the mercury regulations in a letter to DEP Secretary Kathleen McGinty.¹⁸⁷

IV. Conclusion

Senate opponents of Pennsylvania's Mercury Reduction Plan did the right thing by accepting the regulations and removing the block on publication. The Commonwealth's rule is not only more effective in reducing dangerous pollution, but it will not burden utility companies. The CAMR, that the Senate attempted to enact, does not reduce emissions in a safe and timely manner. The hot-spots of contamination that result under the regulation of the CAMR and the severe blow that CAMR takes on states' economies are only a fraction of the reasons that the federal rule is flawed. Pennsylvania's Mercury Reduction Plan not only reduces emissions by more than forty percent of the federal rule, but does so faster and in a way that benefits Pennsylvania's health and economy. Pennsylvania is now the largest coal-burning state to approve mercury regulations that are stricter than the federal rule.¹⁸⁸ The approval of the Pennsylvania Mercury Reduction Plan will transform Pennsylvania from a major contributor of mercury pollution into one of the cleanest coal-burning states.

187. DeKok, *supra* note 181.

188. *Pa. takes big step against mercury*, AFX INTERNATIONAL FOCUS, Feb, 20, 2007.