Air Toxins and the Waxman-Markey Bill

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I. Introduction

The Obama Administration has been tackling many issues arising from the greenhouse gas emission regulation.\(^1\) The Waxman-Markey\(^2\) bill attempts to battle global warming by removing greenhouse gas regulation from regulation under the current Clean Air Act provisions into new Clean Air Act sections establishing a cap-and-trade regime for these gases.\(^3\) Air toxins will not be directly regulated by Waxman-Markey, but are a major pollution and health concern that will be affected by the bill's broad reforms if it becomes law.\(^4\) Waxman-Markey should reduce air toxins overall, but may still leave certain communities with a disproportionate share of hazardous pollution.\(^5\) This report includes a basic introduction to air toxins, Waxman-Markey, and how they relate to each other, as well as possibilities for further reform.

II. Air Toxins

Air toxins or toxics are hazardous types of pollution known or suspected to cause cancer, reproductive disorders, birth defects, or other serious health issues, in addition to damaging the environment.\(^6\) There are currently 188 pollutants that fit into this category.\(^7\) “Examples of . . . listed air toxics include dioxin, asbestos, toluene, and metals such as cadmium, mercury,

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5 Id.
chromium, and lead compounds.” Air toxins are often released alongside other types of air pollution, eventually deposited in soil or water, and can remain in the environment for very long amounts of time. Dichlorodiphenyltrichloroethane (“DDT”), for example, was released into the air by agricultural and industrial sources, deposited into the Great Lakes through precipitation, and finally settled in water and soil through inflow from tributary streams. Once DDT has been introduced to the food chain, the chemical accumulates in living organisms and becomes more concentrated at higher levels, adversely affecting fish, birds and other wildlife. Another problem comes from persistent air toxins such as mercury, lead or other heavy metals that can remain in the environment forever and be carried long distances from the emitting source over time.

Air toxins come from a number of sources. For example, “benzene . . . is found in gasoline; perchlorethlyene . . . is emitted from some dry cleaning facilities; and methylene chloride . . . is used as a solvent and paint stripper by a number of industries.” Because air toxins are introduced into the environment alongside other types of pollution, including greenhouse gases, they are a type of co-pollutant. Co-pollutants include particulate matter, heavy metals, oxidized nitrogen compounds and toxic byproducts of burning fossil fuels. An important characteristic of co-pollutants, including air toxins, is that as greenhouse gas emissions

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8 Environmental Protection Agency, supra note 6.
10 Id.
11 This process is known as biomagnification because the concentration increases as it moves up the food chain. Id.
12 Id.
13 Reitze & Lowell, supra note 9, at 235. “One government study says that air deposition of lead and polychlorinated biphenyls (PCBs) account for 90% or more of those compounds entering Lake Superior.” Id.
14 Environmental Protection Agency, supra note 6.
16 Id.
increase or decrease, the amount of co-pollutants released coincides with those changes.  

Toxic air pollution reaches people through “direct inhalation, inhalation of resuspended dust, ingestion of contaminated food products, ingestion of contaminated water, and skin contact with contaminated soil, water or dust.” One carrier of air toxins is particulate matter (“PM”); PM is simply a particle form of pollution. Particulate matter transports air toxins by attracting metals and chemicals in the air and attaching them to particles that are large enough to be inhaled and lodged in the lungs. The most toxic PM, which contains high amounts of metals, comes from industrial and commercial smokestacks and is water soluble. These properties make man-made PM the most hazardous type of PM, and it is easily incorporated into the environment. For example, toxic PM is created when industrial waste is incinerated and “fly ash” is released into the air, carrying with it metals (such as arsenic, beryllium, cadmium and chromium) and dioxins.

Air toxins cause reproduction problems, birth defects, lung disease, nervous system disorders, immune system disorders, endocrine system disorders, neurological function problems, liver damage or certain cancers. The people most at risk for being adversely affected by air toxins are the elderly, children, pregnant women, and those with pre-existing conditions. Additionally, many air toxins come from stationary sources and become locally concentrated in

17 Kaswan, supra note 4.
18 Reitze & Lowell, supra note 9, at 235.
19 PM 10 Cited as Next Major Issue Facing State Air Quality Regulators, DAILY ENVIRONMENT REPORT, January 3, 1995, at D15.
20 Id.
22 Id.
23 Reitze & Lowell, supra note 9, at 303.
24 Id. at 235.
25 Id.
the soil and water. The health risks for those located around stationary sources are especially high. The full range of effects that toxic air pollution has on human health is still being researched. Studies have found that certain types of particulate matter cause premature death, cancer and serious respiratory illness; furthermore, the man-made particulates, which are small in size, carry more metals (such as manganese and lead) and are most strongly associated with adverse health effects. A study on rodents has found that fly ash PM exposure acutely affects animals with compromised cardiovascular systems as compared to healthy ones. One recent study has even found a connection between PM pollution from automobiles and cardiovascular disease. Particulate matter alone causes thousands of known deaths each year, according to the EPA.

III. Waxman-Markey

The American Clean Energy and Security Act of 2009 (“Waxman-Markey”) is currently working its way through the legislative process. The bill is in response to President Obama’s request for a “cap-and-trade” emissions program. The bill is also Congress’s proposed promulgation of greenhouse gas regulations under the current Clean Air Act provisions. The bill targets both motor vehicle emissions and stationary source emissions in an effort to mitigate

27 Id.
29 Mushak, supra note 21.
30 Id.
31 Study Finds Tiny Air Particulate Matter May have Cardiovascular Health Effects, DAILY ENVIRONMENT REPORT, April 20, 2004, at A10.
32 Cook, supra note 28.
their impact on climate change.\textsuperscript{36}

Waxman-Markey attempts to harmonize the regulations of greenhouse gases and fuel economy from different states and federal government agencies so that the burden on industries is lessened.\textsuperscript{37} In fact, the EPA would be barred from regulating greenhouse gases so that industries would only have to comply with one set of regulations.\textsuperscript{38} However, Waxman-Markey does give the EPA more responsibility to research and to establish further goals regulating other environmental harms.\textsuperscript{39} Waxman-Markey sets lofty standards for greenhouse gas emissions change, calling for a seventeen percent reduction in emissions by 2020.\textsuperscript{40} The companies who do not use all of their emissions allowances each year can “bank” them for use as needed in the future or trade them on the to-be-created carbon market.\textsuperscript{41}

The ultimate goal of the cap-and-trade system is to get the right price on carbon credits to incentivize positive environmental and economic changes.\textsuperscript{42} The cap-and-trade system creates a market for carbon credits to be bought and sold; the theory is that it will spawn private investments in projects to create the marketable carbon offsets and emissions reductions.\textsuperscript{43}


\textsuperscript{37} Scott, \textit{supra} note 3. The bill includes language “to resolve conflicting state and federal standards governing vehicle efficiency and greenhouse gas emissions. The draft bill directs the executive branch to ‘harmonize’ vehicle standards set by the Transportation Department, EPA, and California.” American Clean Energy and Security Act, H.R. 2454, 111th Cong. § 112 (2009).

\textsuperscript{38} \textit{Id.}

\textsuperscript{39} Stoll, \textit{supra} note 36. For example, the EPA would have to establish new requirements for controlling hydrofluorocarbons and black carbon; “provide for allocated emission allowance distributions that would support commercial deployment of carbon capture and sequestration technologies; establish national transportation-related greenhouse gas reduction goals, including new standardized models and data collection methods, sufficient to meet overall greenhouse gas reduction goals provided elsewhere in the bill; establish a program for international offset credits based on activities that reduce or avoid greenhouse gas emissions or increase sequestration of greenhouse gases, in a developing country; establish standards to ensure that international deforestation reductions are measurable, verifiable, permanent, and monitored, and account for leakage and uncertainty...” \textit{Id.}


\textsuperscript{41} Scott, \textit{supra} note 3.

\textsuperscript{42} Juliet Howland, \textit{Not All Carbon Credits are Created Equal}, 27 UCLA J. ENVT. L. & POL’Y 413, 455 (2009).

\textsuperscript{43} Hunter, \textit{supra} note 1, at 265.
Waxman-Markey furthers this goal by allowing companies to meet some emissions cuts through funding “low-carbon offset projects.” However, the faster significant emissions reductions are required, the more costly compliance becomes. On a short timeline carbon offsets cost more, but new technology may not be developed quickly enough to be implemented. The bill has already caused an increase in the purchase of carbon offsets in voluntary markets and more interest in acquiring “emissions-reducing projects.”

IV. Air Toxins Under Cap-And-Trade

Air toxins result from the same processes that form greenhouse gas emissions, including the combustion of fossil fuels in sources such as industrial plants and motor vehicles. Therefore, under greenhouse gas reduction policies, toxic co-pollutants are also usually reduced. However, unlike carbon dioxide, toxic air pollution is locally damaging to the environment and human health, as air toxins tend to be geographically concentrated around emitting sources.

The market for carbon trading will greatly reduce the cost of reducing greenhouse gas emissions. The expectation under Waxman-Markey’s system is that the revenues from auctioning the offsets would be $136 billion per year. Under a cap-and-trade system, a polluting company could purchase credits instead of reducing its greenhouse gas emissions,

44 Scott, supra note 3.
46 Id.
48 Kaswan, supra note 4. Note that air toxins also come from indoor sources, such as cleaning solvents, that are not a source of greenhouse gas emissions regulated under Waxman-Markey. See Environmental Protection Agency, supra note 6.
49 Kaswan, supra note 4.
50 Howland, supra note 42.
51 Reitze & Lowell, supra note 9, at 275.
52 Congressional Budget Office, supra note 45.
53 Id.
creating a “co-pollutant hotspot” that could have hazardous effects on the local community.\textsuperscript{54} At forty dollars per metric ton of emissions, the cost of purchasing offsets may easily be less than adopting new low-emission technologies.\textsuperscript{55} This effect is particularly frustrating because of the recognition that hazardous air pollutants are disproportionately concentrated in low-income and ethnic minority communities.\textsuperscript{56} While some state laws take into account sensitive areas, such as hospitals or schools, when regulating toxic emissions, the cap-and-trade system does not.\textsuperscript{57}

V. Possible Response

One highly contested provision of Waxman-Markey is the “five year moratorium on state cap-and-trade programs to cut greenhouse gas emissions.”\textsuperscript{58} This ban means that, at least initially, state and regional programs aimed at reducing greenhouse gas emissions would not be able to establish their own local caps, which may help to control localized toxic pollution if the state or regional programs include air toxics provisions.\textsuperscript{59} Alternatively, states could use anti-pollution funding to focus on co-pollutant “hotspots.”\textsuperscript{60} They may simply see who is buying offsets and craft regulations at the state level to compensate for any localized effects.\textsuperscript{61} The regulation of greenhouse gas emissions is different from regulating toxic pollutants.\textsuperscript{62} States could require higher standards of co-pollution control technologies.\textsuperscript{63} California, for example, already has a system in place that assesses the risk of exposure to toxic air pollution to evaluate which sources must undergo stricter regulations.\textsuperscript{64}

\begin{thebibliography}{99}
\bibitem{54} Reitze & Lowell, \textit{supra} note 9, at 275.
\bibitem{55} Congressional Budget Office, \textit{supra} note 45.
\bibitem{56} Selmi, \textit{supra} note 26, at 433.
\bibitem{57} Selmi, \textit{supra} note 26, at 434.
\bibitem{58} Natter, \textit{supra} note 40.
\bibitem{59} Id.
\bibitem{60} Hunter, \textit{supra} note 1, at 266.
\bibitem{61} Id. at 268.
\bibitem{62} Environmental Protection Agency, \textit{supra} note 6.
\bibitem{63} Boyce, \textit{supra} note 15.
\bibitem{64} Reitze & Lowell, \textit{supra} note 9, at 264.
\end{thebibliography}
VI. Conclusion

Even under a cap-and-trade regime, air toxins will continue to be a concern for communities and sensitive populations. Waxman-Markey implements a cap-and-trade system to control greenhouse gas emissions, but it does not provide direct regulation of the toxic co-pollutant hotspots that may be created by carbon credit purchasers. Reform-minded states may choose to see this omission as an inadequacy in a document that should revolutionize pollution control, or as an opportunity to focus local resources on an inherently localized problem.